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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

(Nineteenth session,
Geneva, 2-10 December 1996)

REPORT OF THE COMMITTEE OF EXPERTS
ON ITS NINETEENTH SESSION
(2-10 December 1996)

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REPORT

ORGANIZATION OF THE SESSION

Opening and duration of the session

1. The Committee of Experts on the Transport of Dangerous Goods held its nineteenth session from 2 to 10 December 1996.
2. Mr. J. Capel Ferrer, Director of the Transport Division of the Economic Commission for Europe, welcomed participants.
3. He informed the Committee that the Governments of Australia and Spain, which for several years had been taking part in the work of the Committee and the Sub-Committee as observers, had applied to participate as full members and that their application had been accepted by the Secretary-General whose decision had been endorsed by the Economic and Social Council.
4. He also informed the Committee that the Transport Division had had a new professional post since 1 January 1996 for work on the transport of dangerous goods, although the post was currently frozen because of the financial difficulties of the United Nations; however, it had been possible to fill it on a temporary basis as from July 1996.
5. Lastly, he stressed the importance of the decisions which the Committee was to take during the session, particularly with reference to multimodal portable tanks, the periodicity of amendments to the Recommendations and work on the overall harmonization of classification and labelling systems for dangerous products. In this regard, he drew the Committee's attention to ongoing informal discussions on the possible extension of the mandate of the Committee for the definitive development of a comprehensive system and its follow-up, and the possible establishment of a special sub-committee for the purpose. If these discussions led to specific proposals, the respective mandates of the Committee, the possible new sub-committee and the Sub-Committee of Experts on the Transport of Dangerous Goods should be comprehensively reviewed in detail and he invited experts to give the matter advance consideration.

Attendance

6. The session was attended by experts from the following countries: Argentina; Australia; Belgium; Brazil; Canada; China; France; Germany; India; Italy; Japan; Mexico; Netherlands; Norway; Poland; Russian Federation; Spain; Sweden; United Kingdom; United States of America.
7. Observers from Austria, the Czech Republic, Finland, Iran (Republic Islamic of), Panama, Portugal, Slovakia, South Africa, Switzerland, Tunisia and the Ukraine participated in accordance with rule 72 of the rules of procedure of the Economic and Social Council.
8. Representatives of the United Nations Environment Programme (UNEP) and of the following specialized agencies also attended the session: International Labour Organization (ILO); International Maritime Organization (IMO); International Civil Aviation Organization (ICAO); World Health Organization (WHO).

9. The following intergovernmental organizations were represented: European Commission (EC), International Civil Defence Organization (ICDO), Central Office for International Carriage by Rail (OCTI), Organization for Economic Co-operation and Development (OECD) and the Committee of the Organization for Co-operation between Railways (OSZhd).

10. Representatives of the following non-governmental organizations: European Chemical Industry Council (CEFIC), European Confederation of Paint, Printing Ink and Artists' Colours Manufacturers' Associations (CEPE), European Industrial Gases Association (EIGA), European Fertilizer Manufacturers' Association (EFMA), Federation of European Aerosol Association (FEA), Hazardous Materials Advisory Council (HMAC), International Air Transport Association (IATA), International Council of Intermediate Bulk Container Associations (ICIBCA), International Confederation of Drum Reconditioners (ICDR), International Road Transport Union (IRU), International Organization for Standardization (ISO), European Portable Tank Association/Tank Container Association (EPTA/TCA) took part in the discussions when items of concern to their organizations were considered.

Election of officers

11. The Committee had agreed at its eighteenth session that Mr. L. Grainger (United Kingdom) and Mr. J. Monteith (Canada) would act as Chairman and Vice-Chairman respectively for the 1995-1996 biennium (see ST/SG/AC.10/21, para. 197).

12. Mr. L. Grainger and Mr. J. Monteith informed the Committee, through the Director of the Division, that while they were ready to undertake these duties with regard to agenda items concerning work done by the Sub-Committee in 1995 and 1996 they would find it undesirable to do so once items concerning future work were discussed since they would not be seeking a new mandate for the next biennium.

13. It was agreed, no objections having been raised, to elect Mr. Grainger and Mr. Monteith as Chairman and Vice-Chairman of the session, and to hold new elections during the session when a suitable moment arose (see paragraphs 163 to 166).

Adoption of the agenda

14. The Sub-Committee adopted the provisional agenda prepared by the secretariat (ST/SG/AC.10/22 and Add.1), after amending it to include late submissions (information documents INF.1 and INF.2).

WORK OF THE SUB-COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS ON ITS TENTH, ELEVENTH AND TWELFTH SESSIONS AND RELATED PROPOSALS

(a) Draft amendments to the Recommendations on the Transport of Dangerous Goods

Document: ST/SG/AC.10/R.504

15. The Committee took as the basis for its discussion the consolidated text ST/SG/AC.10/R.504 prepared by the secretariat on the basis of the decisions taken by the Sub-Committee at its tenth, eleventh and twelfth sessions (see also the relevant reports ST/SG/AC.10/C.3/20, ST/SG/AC.10/C.3/22 and ST/SG/AC.10/C.3/24).

Classification of vanadium pentoxide

Documents: ST/SG/AC.10/R.651 and -/R.760 (United States of America)

16. The proposal to reclassify UN No. 2862 in Packing Group III rather than in Group II was adopted (see annex 1).

N.o.s. entries for desensitized explosives in Division 4.1

Documents: ST/SG/AC.10/C.3/R.725 (Germany)
ST/SG/AC.10/R.510 (Belgium)

17. The purpose of the document submitted by Belgium was the adaptation of the texts concerning Class 3 following the decision taken by the Sub-Committee to include desensitized explosives in Class 3. The document submitted by Germany remained on the agenda since the Sub-Committee did not adopt the proposal on non-flammable nitroglycerin mixtures containing not more than 30% nitroglycerin by mass.

18. The discussion on the proposal by Germany showed that opinions were still very divided as to how the nitroglycerin mixtures in question should be handled, particularly with regard to the question of whether non-flammable liquids should be classified in Division 4.1 which was normally devoted to flammable solids. The Committee decided that the issue should be studied in the course of the next biennium and the expert from Germany was asked to prepare a new proposal according to the comments made.

19. The document submitted by Belgium was also the subject of discussion on how to adapt the provisions concerning Class 3, and in the light of the comments made it was decided to maintain the decisions taken by the Sub-Committee and postpone the issue of adapting the texts concerning Class 3 until the next biennium.

Classification of bromopropanes (UN No. 2344)

Documents: ST/SG/AC.10/C.3/R.746
ST/SG/AC.10/C.3/20, para. 83
ST/SG/AC.10/C.3/22, para. 123
ST/SG/AC.10/C.3/24, para. 95

20. The expert from Germany said that it was difficult to measure the flashpoint of bromopropanes according to the methods recommended in chapter 5 but that a new method under discussion in ISO (draft ISO standard 13736) showed clearly that these substances had a flashpoint (particularly when shaken about as they were during carriage) which would justify their classification in Class 3, particularly as they had explosive limits when mixed with air of between 3.3% and 9.1%. He considered that it would not be appropriate to delete the entry UN 2344 since in this case new proposals for inclusion in Class 3 would be put forward in the near future on the basis of the ISO methods.

21. The representative of HMAC noted, however, that these substances do not exhibit a flashpoint when tested according to the methods prescribed in the Recommendations and do not pose a practical hazard of flammability. He further noted that various other halogenated substances may exhibit explosive limits in air under certain conditions (e.g. trichloroethylene), but nevertheless are not

considered flammable under the Recommendations. Therefore, he considered it appropriate to maintain the Sub-Committee's decision to delete the entry.

22. However, the Committee decided to keep the entry.

Classification of a substance based on human experience

Document: ST/SG/AC.10/R.540 (HMAC)

23. The Committee agreed to insert a new special provision in the entries mentioned in the appendix to the document, specifying that the substances covered by these entries had been classified on the basis of human experience (see annex 1).

24. The Committee did not, however, adopt the proposal by HMAC concerning the classification of solutions and mixtures containing such substances (second and third sentences of the proposed special provision).

25. The Committee also considered that the list submitted by HMAC should not be regarded as exhaustive and that as a result the phrase in brackets in paragraph 1.43 (ST/SG/AC.10/R.504) should not include the expression "where mentioned" (see annex 1).

Deregulation of viscous liquids belonging to packing group III

Document: ST/SG/AC.10/C.3/R.652 (ICAO)

Informal document: INF.10 (CEPE)

26. The expert from the United States of America said that as the provisions introduced into the ninth revised edition of the Recommendations making it possible to deregulate certain viscous liquids (para. 5.3.5) would not apply by maritime and air transport, he proposed their deletion and a return to the provisions of the eighth revised edition, particularly as he considered it dangerous from a safety point of view to allow exceptions of this type.

27. Several delegations recalled that these exceptions had been applied to land transport for many years, that they were of great importance for the paints industry, and that, despite the frequency of such transport operations and the quantities carried, there had been no serious incidents.

28. The Committee decided to keep paragraph 5.3.5.

29. The Committee decided against a proposal by the expert from the United States to reduce the maximum content referred to in paragraph 5.6 (d) from 450 litres to 30 litres.

Classification of pesticides

Documents: ST/SG/AC.10/C.3/R.670 (Germany)
ST/SG/AC.10/C.3/R.687 (United States of America)
ST/SG/AC.10/C.3/R.717 (Switzerland)
ST/SG/AC.10/C.3/R.718 (Switzerland)
ST/SG/AC.10/R.520 (United Kingdom)
ST/SG/AC.10/R.551 (United Kingdom)

Informal documents: INF.7 (India)
INF.8 (India)
INF.23 (secretariat)

30. The Committee adopted the proposals by the United Kingdom (ST/SG/AC.10/R.520) resulting from the work of a correspondence group and aimed at a better correlation between the proper shipping names and a list of pesticides annexed to the WHO directives for classification (Doc. WHO/PCS/96.3 of WHO) (see annex 1).

31. The Committee also noted that the secretariat had prepared a draft column to be included in the WHO publication containing appropriate references to the United Nations numbers. The experts were asked to transmit any comments to the secretariat as quickly as possible.

32. The representative of WHO, welcoming this cooperation with the Committee, confirmed that the next publication would take the proposals of the correspondence group into account. He also confirmed that a new column for UN numbers would be included and thanked the secretariat for its contribution.

33. In view of how the work had developed, the Committee confirmed that the pesticides table could be deleted from the United Nations Recommendations in accordance with the proposal by the United States in document ST/SG/AC.10/C.3/R.687, section 4 (see annex 1).

34. The expert from India said that as a result of these decisions, she was able to withdraw informal document INF.7. Where informal document INF.8 was concerned, it was confirmed that schradan was no longer used and therefore appeared in table 6 of the WHO publication (Technical products not included in the classification and believed to be obsolete or discontinued for use as pesticides). The representative of WHO agreed to bring the comments from the expert of India to the attention of the next WHO relevant meeting and before the publication is updated.

35. The expert from Belgium considered that the pesticides table should have been kept in the Recommendations until the WHO publication had been adapted; he also pointed out that other parts of the Recommendations should also be adapted. He further stated that, in his view, the second column indicating whether the pesticide name is an ISO approved name should be kept in the WHO publication and not be deleted as suggested by the representative of WHO.

Substances carried in the frozen or refrigerated state

Informal document: INF.3 (Canada)

36. The expert from Canada withdrew his proposal which had already been submitted at the last session of the Sub-Committee when decisions had been taken concerning document ST/SG/AC.10/C.3/R.667.

List of organic peroxides

Document: ST/SG/AC.10/R.538 (CEFIC)

37. The proposed addition of a new organic peroxide formulation in table 11.3 was adopted (see annex 1).

Paragraph 15.3.2, Shrink-wrapped or stretch-wrapped trays

Document: ST/SG/AC.10/R.518 (United Kingdom)

38. The proposal that trays should no longer be associated with packagings of shrink-wrap or stretch-wrap as set out in paragraph 15.3.2 was not adopted, since several delegations felt that it compromised safety.

IBCs: Periodic and testing requirements

Document: ST/SG/AC.10/R.541 (United States of America)

39. The Committee agreed that IBCs filled before the expiry date of the last test or inspection could be transported after that date for the purpose of undergoing a further test or inspection under the following conditions:

- (a) empty, uncleaned IBCs, no date limit;
- (b) filled IBCs, three months after the deadline;
- (c) IBCs filled with a substance which must be disposed of or recycled, three additional months after the first three months of exemption provided that a suitable notation in the transport document has been entered.

Any other or additional periods should have the approval of the competent authority (see annex 1).

Large packagings

Document: ST/SG/AC.10/R.522 (Germany, Norway, United Kingdom, Sweden)

Informal document: INF.9 (United Kingdom)

40. Several delegations commented at length on the proposal to include a new chapter on large packagings. Following a general discussion of the question, it became clear that the new draft provisions would require further detailed consideration in the course of the next biennium.

41. The expert from the United Kingdom suggested that a working group should meet in London on 28 February 1997 on the occasion of the second session of the IMO Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC 2, 24-28 February 1997) and invited delegations with comments to make to send them to him in writing by the end of January 1997 so that a new text could be prepared (on the basis of the new structure of the model Regulations to be annexed to the tenth revised edition of the Recommendations).

Other regulated substances

Documents: ST/SG/AC.10/C.3/R.684 (HMAC)
ST/SG/AC.10/C.3/R.731 (Canada)

Informal document: INF.29 (ICAO)

42. The ICAO proposal concerning entries 3334 and 3335 was adopted (see annex 1).

Report of the IMO Editorial and Technical Group of the Sub-Committee on Dangerous Goods, Solid Cargoes and Containers at its session from 23 September to 2 October 1996

Informal document: INF.11 (IMO)

43. The Committee took note of the work of the "E and T" group of IMO and in particular the invitations to possible future work set out in paragraphs 3.5, 3.6.1, 4.2 and 4.4 of the report.

44. The Committee adopted the proposed amendments set out in section 5.4 of the document (see annex 1).

45. The proposal to clarify the carriage requirement for UN 1327 was adopted with a slight amendment resulting in the replacement of special provision 76 with a new special provision 281 (see annex 1).

Texts adopted by the Sub-Committee

46. The Committee adopted document ST/SG/AC.10/R.504 as a whole, as amended by the above proposals once adopted, with some corrections (see annex 1).

New proposals

47. The Committee agreed to discuss under agenda item 3 (a) some new proposals appearing under agenda item 8 (any other business).

New entries in Class 2 for airbag inflators, airbag modules and seat-belt pretensioners containing compressed gases

Document: ST/SG/AC.10/R.526 (Netherlands)

Informal document: INF.19 (United States of America)

48. It was agreed that there was a practical problem for the classification of these devices which did not meet the criteria of Class 1 but which were difficult to classify in Class 9 under item 3268 since they contained compressed gases.

49. The expert from the United States of America supported the proposal by the Netherlands and proposed some amendments to the proposed new special provision to ensure safety in the event of the airbag inflator was inadvertently activated in transport.

50. The expert from Canada was opposed to a new entry in Class 2, considering that these appliances should figure in Class 9 as self-inflating life-saving appliances (UN No. 2990).

51. The expert from Germany agreed that a new entry was necessary but would have preferred an entry in Class 9 with the obligation to undergo a series 6 (c) test to prove that the article did not come under Class 1.

52. The expert from France did not oppose the classification of these articles in Class 2 provided that they underwent series 6 (c) tests to prove that they did not come under Class 1. He considered that, according to the Netherlands proposal, it would be sufficient to add a compressed gas cylinder to articles normally classified in Class 1 to classify them in Class 2, something he found illogical.

53. The Committee adopted a text on the basis of the proposals by the Netherlands and the United States of America whereby it was not necessary to resort to series 6 (c) tests to classify the articles in question in Class 2 rather than Class 1 once it had been determined that the explosive initiating device posed a minimal explosive risk according to the exception in para. 1.11 (b) and an initiated airbag inflator posed no significant projection hazard (see annex 1).

Special provision for UN No. 3164

Document: ST/SG/AC.10/R.544 (Germany)

54. The proposal by Germany was adopted subject to drafting changes to be made by a drafting group (see annex 1, special provision 283).

Heating of tanks and IBCs as a consequence of engulfment by fire

Document: ST/SG/AC.10/R.545 and INF.13 (CEFIC)

55. The proposals by CEFIC concerning paragraphs 11.2, 12.3, 12.558, 14.2.2.9.2 and the relevant amendments to the Manual of Tests and Criteria were adopted (see annexes 1 and 2).

Classification of aerosol dispensers

Documents: ST/SG/AC.10/R.532 (Norway)
ST/SG/AC.10/R.509 (Germany)

56. The Committee agreed that the question of the classification of aerosol dispensers, particularly with regard to flammability, should be postponed until the next biennium in the context of the overall harmonization of the classification systems.

57. The expert from the United States of America, who had expressed the wish that document ST/SG/AC.10/C.3/R.590 on this question should also be postponed until the next biennium, was requested to submit a new proposal taking the earlier discussions into account.

New entry for chemical oxygen generators

58. The ICAO proposal for a new entry (UN 3356) was adopted subject to the preparation of a special provision 284 by a drafting group (see annex 1).

Battery-powered vehicle or battery-powered equipment (UN No. 3171)

Informal document: INF.27 (ICAO)

59. The proposal by ICAO to place sodium battery-powered vehicles and battery-powered equipment under entry 3171 and as a result to amend the last sentence of special provision 239 so that sodium batteries installed in vehicles would be subject to the regulations for air transport, was adopted (see annex 1).

(b) Multimodal portable tank transport

Documents: ST/SG/AC.10/C.3/20/Add.1
ST/SG/AC.10/C.3/22/Add.1
ST/SG/AC.10/C.3/24/Add.1 and -/Add.1/Corr.1
ST/SG/AC.10/R.505/Add.8 (United States of America)

60. The Chairman recalled the mandate which had been given to the Working Group on Portable Tanks for the biennium 1995-1996 and said the Committee should now take the necessary decisions to complete the work. In discussion of this item the documents should be grouped by subject in accordance with recommendations of the Chairman of the Working Group (Mr. B. Schulz-Forberg, Germany).

Rail impact testing

Documents: ST/SG/AC.10/R.521 (South Africa)
ST/SG/AC.10/R.543 (Germany)

61. The Committee agreed to add the test methods in force in Germany and South Africa to the list of acceptable methods for rail impact testing (see annex 3).

62. At the suggestion of the expert from the United States of America, the Committee agreed to ask ISO to expedite the work on developing a standardized rail impact test method for portable tanks in accordance with ISO 1496-3:1995.

Proposals by Belgium

Documents: ST/SG/AC.10/C.3/R.772
ST/SG/AC.10/R.549

63. Document ST/SG/AC.10/C.3/R.772 was withdrawn and the Committee considered the various questions and proposals contained in document ST/SG/AC.10/R.549 point by point; some of these were withdrawn since they had already been taken into account in document ST/SG/AC.10/R.505/Add.8.

64. The proposals concerning Note 15 to table 12.2 and the new paragraph 12.3.14 were adopted (see annex 3).

65. With reference to paragraph 12.7.3.1, the representative of EPTA/TCA said that "self closing" referred to a spring-loaded internal valve where the valve was opened manually against the action of the spring and where it would close automatically when the valve in the open position was disturbed, i.e. the valve handle was unlatched or the remote control was pulled.

66. With reference to paragraph 12.30.2, the representative of EPTA/TCA explained that openings which were blanked off with a blind flange should no longer be considered to be openings and were not subject to the requirements of paragraph 12.30.2.

67. Where paragraph 17.3.8 was concerned, it was recalled that the value of 30 °C had been selected because it was most representative of the average daily ambient temperature (bearing in mind the heating and cooling that would take place over 24 hours). The expert from the United States of America explained that the value of 30 °C would not adversely affect safety since it was used as an assumed value while variations in ambient temperature which could be experienced during carriage were taken into account in calculating the holding time prior to each shipment.

68. With reference to paragraph 12.7.1, the expert from Australia shared the opinion of the expert from Belgium that if two blank flanges were welded on the shell, one inside and one outside, there could be problems of corrosion or reaction due to chemical incompatibility in the event of a leakage from the inside flange and accumulation of the product between the two flanges.

69. The expert from the United Kingdom said that the Working Group's intention was to provide for a single blank flange welded inside and out to blank-off an existing opening.

70. The Committee decided to refer the text to a working group for amendment so that there would be no errors of interpretation (see annex 3).

Movement of tanks beyond their reapproval period

Documents: ST/SG/AC.10/R.511 and -/Corr.1 (EIGA)

71. The principle of the proposal was adopted but it was decided to bring the derogations into line with those adopted for IBCs (see annex 3).

Protection against impact and overturning

Documents: ST/SG/AC.10/R.514 and -/Corr.1 (EIGA)
ST/SG/AC.10/R.536 (United States of America)

72. Several experts supported the principle of these proposals to provide additional examples of adequate means of providing protection, and a working group was set up to consider the two proposals.

73. Following the discussions of the working group, the Committee decided that additional examples should be introduced (see annex 3).

Exceptions for small (450 to 1,000 litres) portable tanks

Documents: ST/SG/AC.10/R.535 and -/Add.1 (United States of America)

74. The proposal that portable tanks used for the carriage of liquids/solids and non-refrigerated liquefied gases, with a capacity of more than 450 and less than 1,000 litres, were not required to be equipped with a remote control device to close the bottom discharge stop valve was adopted (see annex 3).

Effects of fatigue during normal conditions of handling and transport

Document: ST/SG/AC.10/R.546 (EPTA/TCA)

75. The proposal to amend paragraphs 12.3.8, 12.27.7 and 17.3.11 was adopted (see annex 3).

Marking pressure-relief devices

Informal document: INF.17 (EPTA/TCA)

76. The proposal concerning the marking of pressure-relief devices (paras. 12.14.1, 12.34.4, 17.9.1) was adopted (see annex 3).

Marking of plates

Informal document: INF.18 (EPTA/TCA)

77. The Committee agreed to add an additional line for the marking of plates, concerning the external design pressure, but only for tanks intended for the carriage of liquids/solids or non-refrigerated liquefied gases, since it would not really concern tanks intended for the carriage of refrigerated liquefied gases (see annex 3).

List of substances which are crystallisable or highly viscous which should be carried in tank-containers fitted with bottom discharge outlets

Document: ST/SG/AC.10/R.508 (Germany)

78. The proposal consisted in adding a definition whereby any substance with a melting point between 20° C and 45° C was considered to be crystallisable, in connection with paragraph 12.7.2 which provided that bottom discharge outlets for portable tanks carrying such substances did not require to be equipped with an internal stop-valve.

79. The representative of OCTI, supported by the representative of EPTA/TCA, said that in practice carriers could use heatable tanks for the carriage of such substances, which would avoid problems of crystallisation, and in such cases equipping the tank with an internal stop-valve did not pose problems.

80. A representative of Belgium said that in his country substances of this type caused problems for carriers.

81. The Committee decided to keep the idea of "crystallisable" in paragraph 12.7.2, but did not adopt the definition proposed by Germany, since it considered that the question could be resolved on a case-by-case basis in the list of substances.

Provisions for gases with critical temperatures below 65° C

Document: ST/SG/AC.10/R.515 and -/Corr.1 (EIGA)

82. The proposal was intended to supply provisions for tanks for the carriage of compressed gases or liquefied gases with low critical temperatures which existed in the European Regulations (RID and ADR) but not in maritime transport (IMDG Code).

83. The Committee considered that it was premature to discuss this question and that it would be preferable to include it in the programme of work of the next biennium.

Upper design temperature requirements in portable tanks for liquefied gases under pressure

Document: ST/SG/AC.10/R.529 (EPTA/TCA)

84. In reply to the proposal by EPTC/TCA which considered it unnecessary to indicate an upper limit for the design reference temperature in paragraph 12.26.14, the expert from the United States of America said that the design temperature range of -40° C to +50° C was used to determine the tensile strength and the elongation at fracture of the materials used in the design of the shell, while the design reference temperature was used to calculate the maximum allowable working pressure.

85. The proposal by EPTA/TCA was not adopted.

Opening pressure and capacity of pressure-relief devices in multipurpose tanks

Document: ST/SG/AC.10/R.537 (OCTI)

86. The proposals for a new paragraph 12.32.4 and for an addition to paragraph 12.33.1 were adopted (see annex 3).

Portable tanks for refrigerated liquefied gases: temperature qualification for R_m and A_1

Document: ST/SG/AC.10/R.512 and -/Corr.1 (EIGA)

87. The proposal was not adopted since several delegations considered that it would mean authorizing wall thicknesses which would be below the prescribed minimum.

Portable tanks for refrigerated liquefied gases: marking of holding time

Document: ST/SG/AC.10/R.513 and -/Corr.1 (EIGA)

88. The proposal to delete the mention of the actual holding time on a portable tank because of the risks of confusion with the reference holding time was not adopted. The Committee agreed that the issue could be discussed further in the next biennium.

Chapter 17: Value for leakproofness test pressure

Document: ST/SG/AC.10/R.516 (United Kingdom)

89. The proposal to reduce, in paragraph 17.2.10, the leakproofness test pressure from "at least 90%" to "not less than 25%" was not adopted.

Chapter 17: periodicity of inspections

Document: ST/SG/AC.10/R.555 (France)

90. The proposal to eliminate the intermediate periodic inspection of 2.5 years for tanks for the carriage of refrigerated liquefied gases, bearing in mind the special conditions for the operation of these tanks which allowed easy detection of the slightest problem, was not adopted.

Reference to technical standards

Document: ST/SG/AC.10/C.3/R.765 (Germany)

91. The expert from Germany said that he would like to include in paragraph 12.27.1 a list of the most frequently used technical standards for the construction of tanks so as to allow tanks constructed in accordance with these standards to operate freely in international traffic. He considered that the reference to the competent authority for the choice of these standards enabled some States to impose their own standards without any real justification from the safety point of view and thus to erect barriers to international trade. The reference to the United States ASME Boiler and Pressure Vessel Code only would not be acceptable either, since other currently used standards existed which ensured at least an equivalent level of safety.

92. Since no unanimity existed on this question, it was decided to keep the reference to the competent authority.

93. The expert from Germany recalled that important work was in progress in the United States on the revision of the ASME Code and in the European Committee for Standardization on pressure appliances and he hoped that the Committee would encourage the development of an international standard for the design and construction of tanks intended for the carriage of non-refrigerated liquefied gases. The Chairman said that the Committee could come back to the question in the next biennium.

Instructions for portable tanks; coded sequence

Documents: ST/SG/AC.10/R.528 (United States of America)

ST/SG/AC.10/R.531 (Germany)

Informal document: INF.30 (Germany)

94. Document ST/SG/AC.10/R.528 contained a list of instructions concerning portable tanks, with the codes T1 to T49, and special provisions with the codes TP1 to TP20, the intention being to include a reference to the instructions to be applied for each substance in table 3.2 of the model Regulations.

95. In document ST/SG/AC.10/R.531, the expert from Germany proposed a comparable approach in so far as a code would also be used to indicate the type of tank to be used, but it was a more elaborate code and enabled the specific provisions applicable to the tank for a given substance to be identified (minimum test pressure, minimum wall thickness, type of bottom discharge outlets, types of pressure-relief devices). This code could be marked on the tank and it would be possible to use a computer to identify the substances which could be carried in a tank so marked and to make checks. A full list of substances on the model of table 12.2 with a new column for the coded sequence would be kept in the chapter on tanks.

96. The expert from Germany said that the two approaches were not contradictory. In document INF.30 he proposed to combine them, in other words, to follow the United States proposal in document ST/SG/AC.10/528 by keeping the reference to codes T1 to T49 in table 3.2 and the instructions for tanks in chapter 4.2 to which would be added a list of substances modelled on document ST/SG/AC.10/R.531 with reference to the coded sequence. New provisions would be added for marking the coded sequence on the tank.

97. Opinions were divided on this question. Several delegations feared that the Recommendations would be complicated by combining the two systems. Their volume would increase considerably and there would be a risk of confusion for users. It would also be advisable to avoid contradictions and ensure that the combination of the two systems did not give rise to different interpretations.

98. Other delegations supported the inclusion of a coded sequence in that it would actually indicate the construction characteristics of the tank, and make it easier to check that the shipper had chosen the appropriate tank for the substance carried.

99. The representative of OCTI pointed out that the coded sequence indicated on the tank would not necessarily correspond to that appearing in the list of substances. He considered that it should be possible to use tanks meeting more stringent requirements. He hoped that whatever the solution arrived

at, it would be permissible to use tanks meeting more stringent requirements and that there would be no problems with interpretation during checks.

100. After a lengthy discussion, the expert from the United States said that he would like to amend his proposal so that the requirements for the degree of filling were included in column 11 of table 3.2 (special provisions) rather than appear directly in the instructions concerning tanks in chapter 4.2, which would reduce the number of T codes.

101. The expert from Germany also said that he would like to amend his proposal as a result of the discussion, by abandoning the list of substances in chapter 4.2 and adding an additional column to the table in chapter 3.2 containing the coded sequence.

102. The Chairman asked the Committee to take a decision on the two proposals. The United States proposal was adopted without opposition as amended. The addition of a new column containing the coded sequence was adopted by a majority.

103. The experts from the United States and Germany were asked to provide the secretariat with a diskette containing table 3.2 amended in accordance with these decisions and in line with the secretariat's instructions for the publishing format.

104. The expert from France pointed out that the coded sequences given in document ST/SG/AC.10/R.531 did not correspond to the present requirements of table 12.2 but to more stringent requirements, particularly with regard to tanks intended for crystallizable or highly viscous substances. She therefore asked that the expert from Germany should ensure that the coded sequences introduced conformed to present requirements.

105. The experts from Canada and Mexico requested further consideration of the proposals by the United States of America and Germany.

106. The Chairman put this motion to the vote and the Committee decided in favour of further consideration.

107. The Chairman asked the experts from the United States and Germany to explain the proposals and their scope very clearly. Once the details had been supplied, he asked the Committee to take a second decision on the two proposals. The expert from Germany requested a roll-call vote on his proposal.

108. The proposal by the United States of America, as amended (see para. 100) was adopted once again.

109. In accordance with rule 61 of the rules of procedure, the Chairman proceeded to a roll-call vote in English alphabetical order, beginning with Mexico which had been drawn by lot.

110. Six experts were in favour of the proposal by Germany (Belgium, Germany, India, Poland, Russian Federation, Sweden).

111. Nine delegations were against the proposal by Germany (Australia, Brazil, Canada, France, Mexico, Netherlands, Spain, United Kingdom, United States of America).

112. Five experts abstained (Argentina, China, Italy, Japan, Norway).

113. The proposal by Germany to insert coded sequences was not therefore adopted.

114. The representative of CEFIC said that the special provision TP9 (footnote 9/ to the present table 12.2), which consisted in providing for self-contained breathing apparatus on board vehicles for certain substances was liable to cause problems for road transport in that in certain countries the use of such apparatus was strictly regulated and required special training. He was invited to submit a proposal on the subject during the next biennium.

Document: ST/SG/AC.10/R.517 (IMO)

115. The Committee considered the proposals put forward by the Editorial and Technical Group of the IMO Sub-Committee on Dangerous Goods, Solid Cargoes and Containers. It adopted the proposals of a technical nature contained in paragraphs 10, 11, 15, 29 and 36 as well as the recommended editorial amendments in other paragraphs (see annex 3).

116. In paragraph 42, the expert from India opposed the deletion of the words "against collision" from paragraph 17.13.5, but the Committee was reminded that it had already amended this paragraph to take account of the need for transverse and longitudinal impact and overturning.

117. With reference to paragraph 29, at the request of the expert from India, the representative of IMO explained that the words "and maximum mean bulk temperature when greater than 50 °C" had been deleted since in practice this temperature never exceeded 50 °C for non-refrigerated liquefied gases under pressure.

118. The proposal to delete the reference to partial pressure in the definition of maximum allowable working pressure in paragraph 12.26.6.2.2.2. was not adopted since this pressure needed to be taken into account for liquefied gases transported under inert gases, for example, ethylene oxide under nitrogen.

119. With reference to paragraph 39, it was decided to amend paragraph 17.7.2 to show that while in principle frangible discs should not be fitted in parallel with spring-loaded relief devices on tanks intended for the carriage of flammable refrigerated liquefied gases, exceptions could be anticipated, for example, for the carriage of hydrogen (see annex 3). Exceptions were frequently permitted by the competent authorities and there had been no reports of problems.

120. With reference to annex 2 of the document concerning the principles adopted by the Sub-Committee for the assignment of requirements concerning the construction and equipment of tanks for a specific substance (ST/SG/AC.10/C.3/24/Add.1, annex 2), the expert from the United States said that he would prepare a new version of these principles of assignment for the next session of the Sub-Committee which would take into account the comments made. The texts of the Sub-Committee and the proposals by IMO would serve as reference documents.

121. The expert from Germany said that he would prepare a proposal concerning wall thickness for substances of Class 8, packing group II (see document ST/SG/AC.10/R.517, annex 2, para. 24).

122. With reference to annex 2, paragraph 29.2 of document ST/SG/AC.10/R.517, the Committee noted that the carriage of propyleneimine, inhibited, in tank-containers had always been authorized by RID and ADR (15 bar test pressure). The prohibition on carriage in tank-containers in the

United Nations Recommendations went back to the first version of table 12.2 (ST/SG/AC.10/1) and the requirements in question had been prepared between 1973 and 1976. The secretariat was asked to carry out an investigation in order to ascertain the reason for the prohibition.

123. The proposal to prohibit bottom openings for flammable or corrosive chlorosilanes (UN Nos. 2986 and 2987) was not adopted.

(c) Reformatting of the Recommendations into model Regulations

Documents: ST/SG/AC.10/R.505 and -/Add.1 to -/Add.9 (Secretariat, United States of America and Brazil)

124. The Committee reviewed one by one the documents which had been prepared which constituted the draft new Recommendations and the model Regulation annexed to them, prepared by the Sub-Committee. The corrections and amendments by the Committee can be found in annexes 3 and 4.

125. In order to avoid legal difficulties concerning the procedure for the amendment of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) which was composed of an annex A and an annex B, the secretariat proposed to change the order of parts 6 and 7 so as to put the provisions concerning transport operations at the end of the Agreement, particularly those specific to a given transport mode. The new parts 1 to 6 would then be common to all transport modes (they could be inserted in annex A of ADR) and part 7 could be prepared separately for each transport mode (annex B of ADR). This proposal was adopted.

126. The expert from Belgium also proposed to reverse the order of parts 5 and 7, so as to put together all the provisions concerning packaging and tanks in parts 4 and 7. The Committee did not adopt this proposal, on the grounds that it was preferable to keep parts 4 and 5 in that order, since they concerned the shipper, while part 7 concerned constructors.

Document: ST/SG/AC.10/R.527 (Netherlands)

127. The proposal concerning figure 1.1 was adopted as well as the change in the heading proposed by the secretariat.

128. The expert from Germany said that he hoped that the data sheet would be supplemented in the future by entries concerning data on the polluting properties of substances. It was recalled that it would first of all be necessary to reach an agreement on criteria.

Document: ST/SG/AC.10/R.542 (United States of America)

129. The proposals to prohibit transport according to the provisions concerning dangerous goods packaged in limited quantities were adopted (UN No. 3064, substances with a Division 4.2 subsidiary risk, chlorosilanes, strong lachrymators and UN Nos. 1569, 1810, 1838, 2442 and 2826 on the basis of human experience) (see annex 4).

Informal document: INF.15 (Secretariat)

130. The secretariat's proposal was to present chapter 4.1 in a more logical and systematic form and to use the same packing methods for organic peroxides and self-reactive substances but to make a distinction among these packing methods between those applying to all organic peroxides and self-reactive substances (520) and those applying specifically to a given entry (521 for UN No. 3109 and 522 for UN No. 3119) (see annex 4).

131. The Committee adopted the proposal as a whole.

132. The expert from the United States of America pointed out that this decision appeared to set a precedence of having separate packing instructions for packagings and for IBCs.

133. The Committee confirmed that it was simply a matter of making the packing instructions easier to read in the particular case of organic peroxides; IBCs were only permitted for two types of organic peroxide and the conditions for their use had to be specified for each substance in the entry. This decision should not therefore constitute a precedent for the continuation of the work.

Document: ST/SG/AC.10/R.528 (United States of America)

134. The proposal by the United States of America for Chapter 4.2 was adopted on the understanding that the tank instructions had to be amended by deleting the informations concerning filling limits which had to be transferred as special provisions into column 11 of the dangerous goods list of Chapter 3.2.

135. Several delegations regretted that certain editorial amendments had been introduced in document ST/SG/AC.10/R.505/Add.8 because the amendments had, in some cases, implications on the meaning of the text. They were invited to transmit their comments in writing to the expert from the United States of America and to the secretariat who will ensure that the text corresponds to document ST/SG/AC.10/C.3/24/Add.1 as amended and adopted at this session. A consolidated version of the tank related provisions, as finalized by the secretariat, is reproduced in annex 5.

136. The expert from Germany considered that during the discussion it had become clear that there will still be inconsistencies in the first version of the reformatted UN Recommendations. Besides this, some points were not decided on the basis of a written text, but are to be prepared by the secretariat and the expert from the United States of America. So he assumed that changes to the content not formally proposed and adopted by the Committee should be identified during one of the next sessions of the Sub-Committee. Any errors should be corrected for the 11th Revised Edition of the Recommendations without formal submissions. The expert from Belgium expressed the same view.

Document: ST/SG/AC.10/R.506 (CEFIC)

137. The proposal to add an additional page numbering system to the model Regulations following the example of the ICAO Technical Instructions did not receive any support.

Informal document: INF.14 (Secretariat)

138. The proposed alignment of the texts concerning Class 7 on the new IAEA regulations for the transport of radioactive material had been prepared by the secretariat in consultation with IAEA and a group of experts on the transport of radioactive material. The proposal was adopted with some corrections by IAEA (see annex 4).

139. The Committee adopted as a whole the texts as amended and asked the secretariat to prepare the next version of the Recommendations in their reformatted form.

Informal document: INF.24

140. The Committee considered the proposal by the secretariat to replace figure 13.4 (transport document for dangerous goods) by an example of a transport document for the multimodal transport of dangerous goods recommended by the ECE Working Party on the Facilitation of International Trade Procedures in its Recommendation No. 11 concerning "Documentary aspects of the Transport of Dangerous Goods", as revised in 1996 (document ECE/TRADE/204). The Committee adopted this proposal without the reproduction on the back of the document of the provision concerning the packing certificate and some drafting changes (see annex 4).

ACTIVITIES RELATED TO THE IMPLEMENTATION OF AGENDA 21

Reports of ILO/UN working groups on the harmonization of classification criteria for physical hazards (reactivity/flammability) (Economic and Social Council resolution 1995/6)

Documents: ST/SG/AC.10/20/Add.2)
ST/SG/AC.10/22/Add.2) (Reports of the working groups)
ST/SG/AC.10/24/Add.3)
ST/SG/AC.10/C.3/R.709 (Germany) (Definitions and criteria for oxidizing gases)
ST/SG/AC.10/C.3/R.732 (Canada) (Water-activated corrosive substances)
ST/SG/AC.10/C.3/R.749 (Germany) (Ammonium nitrate and ammonium nitrate fertilizers)
ST/SG/AC.10/R.509 (Germany) (Harmonization of flammability criteria for aerosols)
ST/SG/AC.10/R.532 (Norway) (Aerosols)
ST/SG/AC.10/R.547 (United Kingdom, Germany) (Reports of the Chairmen of the working groups)
ST/SG/AC.10/R.550 (ILO) (Future work)

Informal document: INF.22 (ILO) (Report on harmonization activities)

141. The Chairmen of the ILO/UN working groups on the harmonization of classification criteria for physical hazards (Mr. R. Woodward, United Kingdom and Mr. G. Oberreuter, Germany) briefly summarized the conclusions of the working groups which, pursuant to Economic and Social Council resolution 1995/6, had met during the sessions of the Sub-Committee in the course of the 1995-1996 biennium. These conclusions can be found in document ST/SG/AC.10/R.547.

142. The representative of ILO introduced the report on progress achieved in elaborating an overall harmonized system for the classification and labelling of chemicals (INF.22) which would be submitted at the second session of the Intergovernmental Forum on Chemical Safety in Ottawa from 10 to 14 February 1997.

143. He also informed the Committee of the discussions of the coordination group for the harmonization of classification systems for chemicals which had met in Geneva on 18 and 19 November 1996. He announced that the problems of classifying mixtures and solutions would be discussed in the near future by OECD (aspects of risks for health and the environment only).

144. The expert from Germany pointed out that where physical risks were concerned, the problem of classifying mixtures and solutions had already been taken into account in the work of the working groups.

145. The Chairman reminded those present that the transport regulations dealt with the question of the classification of mixtures and solutions in a practical form and hoped that scientific discussions on the question would not entail a complication of the systems in force.

146. The expert from Canada said that he would keep the Committee informed of the work to be carried out by OECD concerning risks for health and the environment, including work on solutions and mixtures.

147. The Committee accepted the proposal by ILO to continue the work on the harmonization of classification systems for chemicals constituting physical hazards following the same arrangements as for the period 1995-1996. However, it considered that the work should be concluded in 1997 so as to meet the deadlines established in Agenda 21.

148. The Committee made some amendments to the tables in document ST/SG/AC.10/R.547, and in particular deleted the boxes for ammonium nitrate and ammonium nitrate fertilizers in tables 6 and 7 and amended the notes to tables 2 and 4 as well as the presentation of physical state in tables 6 and 7.

149. The expert from Canada withdrew his reservation concerning explosives in table 6, but stressed that in order for the harmonized system to be implemented efficiently it would be necessary to take economic consequences into account and adopt realistic solutions.

150. The documents concerning ammonium nitrate fertilizer, aerosols, definitions of oxidizing gases and water-activated corrosive substances would be discussed at the next session of the Sub-Committee (ST/SG/AC.10/C.3/R.709, -/C.3/R.732, -/C.3/R.749, -/C.3/R.764, -/C.3/R.775 and ST/SG/AC.10/R.509 and -/R.532).

Informal document: INF.16 (CEFIC)

151. The representative of CEFIC submitted a document on additional screening procedures. He would prepare a new proposal on the basis of any comments which delegations should submit to him by March 1997.

152. With reference to document ST/SG/AC.10/C.3/R.709, the expert from Germany was asked to submit the results of tests carried out in his country in an official document and also to transmit them to ISO.

153. The Committee adopted the report on the work of the working groups as amended and asked that it should be annexed to the report (see annex 6) and transmitted to ILO which should bring it to the attention of the Intergovernmental Forum on Chemical Safety.

Classification criteria for toxicity, environmentally hazardous substances and corrosivity

Document: ST/SG/AC.10/C.3/R.621 (Germany)

Informal document: INF.12 (OECD)

154. The representative of OECD informed the Committee that his organization had not yet fully completed its work on criteria for toxicity, environmentally hazardous substances and corrosivity, which would continue in 1997. However, according to the timetable, the technical work would be completed in 1997.

155. The Committee welcomed the fact that OECD intended to resume the discussions on acute toxicity, currently suspended, in 1997, and that it was planned to meet the 1997 deadline.

156. The Committee took note of document ST/SG/AC.10/C.3/R.691. No activity is needed at present but when the proposal from OECD for acute toxicity is available, the Committee will consider the issue.

Documents: ST/SG/AC.10/R.473 (Germany)
ST/SG/AC.10/C.3/R.635 (United Kingdom)
ST/SG/AC.10/C.3/R.661 (Argentina)
ST/SG/AC.10/C.3/R.664 (United Kingdom)
ST/SG/AC.10/C.3/R.707 (Argentina)
ST/SG/AC.10/C.3/R.708 (Netherlands)

157. These documents concerning classification criteria for environmentally hazardous substances remained on the agenda of the work of the Sub-Committee which would discuss them in the light of the first OECD drafts when these became available.

158. As in the case of the work of OECD concerning the corrosivity to biological tissues, the working group on the harmonization of classification criteria for physical hazards would deal with the properties of metal corrosion.

Dangerous wastes

Informal document: INF.32 (UNEP, Secretariat of the Basel Convention)

159. The representative of UNEP introduced the work of a technical working group of the Conference of the Contracting Parties to the Basel Convention with reference to the preparation of lists of dangerous wastes and the status of such wastes vis-à-vis the Basel Convention.

160. Noting that these lists tended to diverge from the United Nations Recommendations in respect of the shipping name of the wastes but that the classification criteria of Annex III of the Convention continued to be the same as in the Recommendations, the Chairman said that he hoped that close cooperation would be maintained between the ECE Transport Division and the secretariat of the Basel Convention.

Labelling and hazard communication systems

161. The representative of ILO informed the Committee of work in progress in ILO.

162. The expert from Canada said that it was essential that this work should also be completed in 1997 and that cooperation with the Sub-Committee was necessary.

ELECTION OF NEW OFFICERS

163. Consideration of agenda item 4 having been completed, the Chairman and Vice-Chairman said that they wished to bring their respective terms of office to an end, as they had announced at the start of the session.

164. On the proposal of the expert from the United States of America, Mr. S. Benassai (Italy) was unanimously elected Chairman.

165. On the proposal of the expert from Italy, Mr. F. Wybenga (United States of America) was unanimously elected Vice-Chairman.

166. The Committee agreed that the newly elected officers should remain in their posts for the sessions of the Sub-Committee and the Committee during the biennium 1997-1998.

IMPLEMENTATION OF RESOLUTIONS 1995/5 AND 1995/6 OF THE ECONOMIC AND SOCIAL COUNCIL

(a) **Resolutions 1995/5 and 1995/6 of the Economic and Social council**
(Document ST/SG/AC.10/R.548)

167. The Committee noted that the Economic and Social Council had adopted the draft resolutions prepared during the last session (ST/SG/AC.10/21, annex 5), which were issued as Council resolutions 1995/5 and 1995/6.

(b) **Publications of the ninth revised edition of the Recommendations on the Transport of Dangerous Goods and the 2nd revised edition of the Manual of Tests and Criteria**

168. The Committee noted that the ninth revised edition of the Recommendations had been issued in all United Nations official languages and commended the secretariat for that work.

169. The Committee noted that the 2nd revised edition of the Manual of Tests and Criteria had been published in English and Russian only and stressed the importance of issuing the other versions (French, Spanish, Arabic and Chinese) without delay, especially as some of them were already ready for print.

(c) **Activities of international organizations concerned with regulations or recommendations on the transport of dangerous goods at an international level**

170. The Committee noted that IMO, ICAO, UN/ECE and OCTI had prepared amendments to their respective instruments (IMDG Code, Technical Instructions for the Safe Transport of Dangerous Goods by Air, ADR and RID) on the basis of the 9th revised edition of the Recommendations and of the 2nd revised edition of the Manual of Tests and Criteria, and that these amendments will enter simultaneously in force on 1 January 1997.

171. The Committee noted that the European Union has adopted directives requesting the fifteen member states of the European Union to align their laws and regulations concerning the carriage of dangerous goods by rail and by road on the provisions of RID and ADR as of 1 January 1997.

172. The Committee noted that the UN/ECE is preparing, in cooperation with the Central Commission for the Navigation of the Rhine (CCNR), a draft european agreement concerning the international carriage of dangerous goods by inland waterways (ADN).

173. The representative of OSZhD said that the regulations applicable to rail transport of dangerous goods between Member States of his organization had been aligned on RID and would become effective in those countries as from 1 July 1997.

174. The representative of ICAO said that the dangerous goods panel of her organization had already started preparing amendments to the ICAO Technical Instructions on the basis of the expected forthcoming 10th revised edition of the UN Recommendations with an expected effective date of implementation of 1 January 1999.

Chemical Weapons Convention

Informal document : INF.6

175. The Committee noted that the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention) would enter into force on 22 April 1997. The representative of Germany recalled that a list of substances covered by that Convention was contained in an annex to the Convention.

Work of ISO on gas cylinders

Informal document : INF.21

176. The Committee took note of a progress report on the work carried out by the technical committee ISO/TC58 "gas cylinders", and of the list of new standards published or in preparation in that area.

PROGRAMME OF WORK

(a) Periodicity of amendments to the Recommendations on the Transport of Dangerous Goods

Documents: ST/SG/AC.10/R.501 (Germany)
ST/SG/AC.10/R.502 (Argentina)
ST/SG/AC.10/R.523 (Secretariat)
ST/SG/AC.10/R.533 (HMAC)
ST/SG/AC.10/R.534 (United States of America)
ST/SG/AC.10/R.539 (IATA)

Informal documents: INF.26 (ICAO), INF.34 (ICS)

177. It was recalled that the question of periodicity of amendments to the Recommendations had been discussed at the previous two sessions of the Committee, and that it had been agreed so far to keep a two-year cycle for amending the Recommendations. As a consequence, IMO had raised the question at the 1996 substantive session of the Economic and Social Council, where it was noted that it was on the agenda of this Committee's session and where it was decided to invite the Committee to take fully into account the views expressed by delegations during the substantive session of 1996 of the Council. To that effect, the secretariat had prepared a consolidated document reflecting those views (ST/SG/AC.10/R.523).

178. The expert from Germany said that he had to revise his proposal contained in ST/SG/AC.10/R.501. He said that in view of the present work on restructuring of the various modal instruments (RID, ADR, IMDG Code) and the need for carrying out that work on the basis of the Recommendations of the Committee, and in view of the process of global harmonization of systems of classification and labelling of chemicals, it would not be appropriate to implement a four year cycle of amendments as from this session. He proposed to publish new editions of the Recommendations in 1997 and 1999, and then to implement a four year publication cycle with a possibility of agreeing urgent amendments, which would be published separately as amendments and would not be included in a revised consolidated publication, every two years.

179. The experts from Belgium and Italy and the observer from Portugal shared the views expressed by Germany.

180. The expert from Argentina said that he was supporting the original german proposal, i.e. a four year periodicity of amendment. If urgent amendments had to be adopted in the interim period, they would have to be adopted with a two third majority.

181. A member of the secretariat recalled that the Committee, as a subsidiary body of the Council, had to follow the rules of procedure of the Economic and Social Council for voting, unless provided otherwise. Therefore permission of the Council should be sought before applying a two-third majority vote procedure.

182. The experts from the United States of America and the representatives from ICAO, HMAC and IATA said that they could not support a periodicity longer than two years for the various reasons explained in documents ST/SG/AC.10/R.533, -/R.534, -/R.539, INF.26 and -/R.523 annexes 4 and 5, in particular because of the need for taking account in the Recommendations of technological advances so that regulations which are based on the Recommendations remain as modern as possible. They felt that if

the Recommendations and related instruments were amended every four years only, national regulations in countries where dangerous goods are transported in significant quantities would have to be amended on an ad-hoc basis to take account of urgent problems, and this could mean the end of the worldwide harmonization which has been achieved nowadays thanks to the work of the Committee.

183. The experts from Canada, the United Kingdom, Norway and Sweden also supported the two year periodicity of amendments at the present time.

184. The representative of IMO recalled that IMO had raised the problem of the periodicity of amendments at the Committee's previous two sessions as a result of difficulties expressed by IMO member Governments in implementing frequent amendments to the IMDG Code to harmonize its requirements with those of the UN Recommendations. She stressed that, although IMO's timetable for amending the IMDG Code had, in the past, been found to be acceptable, IMO's commitment to harmonize with the UN Recommendations had resulted in amendments to the IMDG Code every 2 years, and increased the burden on administrations. She explained that her organization was focusing on restructuring the IMDG Code and had decided to publish the restructured IMDG Code on 1 January 2000 for implementation on 1 January 2001 incorporating the new IAEA provisions for radioactive material. For this reason, IMO would prefer to incorporate the amendments resulting from this session of the Committee with those to be agreed at the 1998 session directly into the reformatted IMDG Code.

185. Some delegations considered that the difficulties in amending the IMDG Code consistently with the UN Recommendations were primarily due to the current structure of the IMDG code and that the restructuring of the IMDG Code could solve these difficulties.

186. The expert from Brazil said that a trade agreement had been concluded between Brazil, Argentina, Uruguay and Paraguay (MERCOSUR) and that in this context, these countries were harmonizing their legislation on the basis of the UN Recommendations. However, the texts which had been agreed this year were based on the seventh revised edition of the Recommendations, and the industry has been granted a grandfather clause for three years. He underlined the difficulties encountered in these countries for implementing regulations on the transport of dangerous goods and in particular for informing and training the various industrial sectors involved.

187. The representative of OCTI also underlined the difficulties encountered for training the railways staff responsible for the safety of the transport of dangerous goods when regulations are extensively amended too frequently.

188. The experts from France, Spain and the Netherlands and the observer of Switzerland supported a four year periodicity of amendments.

189. After a long debate, allowing for the fact that some of the delegations supporting the four year cycle were however in favour of maintaining the two year cycle for the next biennium, the Chairman put the question to the vote. Fifteen experts agreed that a new edition of Recommendations should be adopted again in December 1998 and published in 1999, while three experts objected and two experts abstained.

190. The Chairman then asked whether the Committee should recommend to the bodies responsible for modal regulations that the amendments adopted by the Committee in December 1998 be implemented through those regulations as from 1 January 2001.

191. Referring to the statement by IMO, a member of the secretariat asked whether an implementation date should also be recommended for the amendments adopted at this session, i.e., 1 January 1999 or 1 January 2001.

192. The representative of IATA said that this would not be appropriate as draft amendments to the ICAO Technical Instructions have already been prepared on the basis of the work of the Sub-Committee in the 1995-1996 biennium.

193. The representative of IMO said that there had been preliminary discussions on draft amendments by her organization, but that no decision had yet been taken as regards their final adoption or the date of implementation.

194. A member of the secretariat said that the UN/ECE Working Party on the Transport of Dangerous Goods and the RID/ADR Joint Meeting had not yet discussed the implementation of the amendments adopted by the Committee at this session, and that this matter would have to be discussed in connection with the present work on restructuring RID and ADR.

195. The Committee did not recommend any date for the implementation of the amendments adopted at this session but recommended that the amendments to be adopted in 1998 should be implemented by 1 January 2001.

196. Referring to the proposal by Germany (see paragraph 178), the Chairman asked whether the Committee could agree in principle with a four year publication cycle after the 1999 publication.

197. The representative of IATA said that it would not be wise to take a firm decision at this stage. He underlined that the 1999 version will contain the first edition of the complete Model Regulations and that several adjustments might be necessary in the short term which might justify a new publication in 2001.

198. Certain delegations supported the idea of adoption of the principle of a 4 year periodicity of publication as from 1999, whilst other delegations considered that it was premature to adopt such a principle and that it would be preferable to take the decision at the 1998 session in the light of the progress made in the restructuring process and in the global harmonization of systems of classification and labelling of chemicals.

199. The Committee decided, by a majority vote (11 against, 9 for) not to take a decision at this session.

(b) Programme of work for the 1997/1998 biennium and related proposals

Test 6 (c)

Documents : ST/SG/AC.10/C.3/R.529 (OECD-IGUS)
ST/SG/AC.10/C.3/R.602/Add.1, -/Add.1/Corr.1 and -/Add.2 (Canada)
ST/SG/AC.10/C.3/R.613/Rev.1 (France)
ST/SG/AC.10/C.3/R.641 and -/Add.1 (United States of America)
ST/SG/AC.10/C.3/R.705 (United States of America)
ST/SG/AC.10/C.3/R.737 (France)
ST/SG/AC.10/R.556 (Canada)

Informal document: INF.20 (United Kingdom)

200. As agreed by the Sub-Committee at its last session (ST/SG/AC.10/C.3/24, para. 126), an informal working group hosted by the expert from Canada met in Orlando (United States of America) from 26 to 28 September 1996 and prepared a proposal for further work on test 6(c) in the next biennium. The report was issued as document ST/SG/AC.10/R.556.

201. The expert from the United States of America considered that the items listed under section 15 of ST/SG/AC.10/R.556 represented a very ambitious programme of work and felt that it would not be appropriate to convene an intersessional working group on that subject after the July 1997 session of the Sub-Committee if there was no assurance that proposals would be submitted for each item listed. He considered also that if a working group had to be convened, the proposals should first be submitted to the Sub-Committee so that its mandate could be clearly defined.

202. Several experts shared the view that the programme was ambitious for a single biennium. However, the Committee considered that the existing proposals could be deferred to the Sub-Committee as a basis for discussion, together with any new proposal and this could be the starting point for carrying out the programme.

Documents : ST/SG/AC.10/C.3/R.552 (Germany) (Definitions and criteria for the tightness of packages and IBCs)
ST/SG/AC.10/C.3/R.780 (Germany) (Reuse, reconditioning and remanufacturing of IBCs)
ST/SG/AC.10/R.519 (United-Kingdom) (Packing of articles of classes 2 to 6, 8 to 9)
ST/SG/AC.10/R.525 (Japan and Netherlands) (UN Pressure vessel test)
ST/SG/AC.10/R.530 (United States of America) (Substances toxic by inhalation)

203. The Committee agreed that the subjects raised in the above documents should be discussed in the next biennium.

Document : ST/SG/AC.10/R.550 (ILO)

204. The Committee, when discussing item 4(a), had already agreed to continue cooperation with ILO for finalizing the proposals for an harmonized system of classification of chemicals presenting physical hazards. The remaining work would be carried out by one single working group under the chairmanship of Mr. G. Oberreuter (Germany) during the two Sub-Committee sessions in 1997.

Document : ST/SG/AC.10/R.554 (France)

205. The expert from France proposed to rationalize the allocation of UN numbers in future in order to ensure correspondence between a particular substance and the transport conditions assigned to that substance, in particular in the case of substances or generic entries where several packing groups or several different tank requirements may at present be assigned to one single UN number. He offered to prepare proposals to that effect in the next biennium.

206. Several experts welcomed the proposal by France, but the majority of the Committee considered that this subject should not be included in the programme of work.

Working methods

Document: ST/SG/AC.10/R.503 (Austria)

207. The observer of Austria presented proposals concerning the working methods and the membership of the Committee, as laid down in paragraph 3 (a), (b) and (c) of document ST/SG/AC.10/R.503.

208. As regards the proposal for shorter duration of meetings by organizing working group sessions in parallel with plenary session, it was mentioned that this possibility had already been used to the extent possible, for example for work on the Manual of Tests and Criteria and on portable tanks, but this procedure was to the prejudice of non-english speaking delegations or of small size delegations which cannot afford to attend at the same time working group sessions and plenary sessions. Furthermore long sessions present the advantage over several shorter sessions that less time is lost in organizational matters and report reading, and therefore better use is made of the working time.

209. For the question of membership and right to vote, a member of the secretariat recalled that the Committee is a subsidiary body of the Economic and Social Council, and as the Council itself and its other subsidiary bodies, has a limited membership. In accordance with resolution 645(XXIII) of the Economic and Social Council, Governments of countries interested in the international transport of dangerous goods are invited to make available, at the request of the Secretary-General and at their own expense, experts to serve on the Committee. Opening the membership to any country would have important implications on the decision - making process and the nature of the work of the Committee as well as financial implications for the secretariat.

Work programme for the biennium 1997/1998

210. The Committee noted the interest of WHO in continuing to cooperate on matters concerning the transport of infectious and related substances. WHO had welcomed the endorsement by the Committee of the proposal to modify parts of Division 6.2 to remove manufactured biological products. However, WHO sees a continuing need to review and bring some editorial improvements to other parts of Division 6.2 and therefore requested that the sub-part of infectious substances should remain on the agenda for the next biennium.

211. The Committee agreed that the work programme for the biennium should be as follows:

- (1) Reformatting of the Recommendations on the Transport of Dangerous Goods (second step)
 - (a) revision of the first version of the Model Regulations annexed to the 10th revised edition of the Recommendations, in particular as regards:
 - portable tanks for gases;
 - rationalized approach for assigning portable tank requirements;
 - additional marking of tanks;
 - (b) Development of additional requirements, in particular:
 - segregation requirements;
 - consignment procedures;
 - packing instructions;
 - introduction of class 7 provisions;
 - (c) Consideration of new proposals concerning subjects approved for inclusion in the work programme, as listed above or in this report;
- (2) Class 1 matters; Test 6(c); UN pressure vessel test;
- (3) Global harmonization of systems of classification and labelling of chemicals.

212. The Committee agreed that proposals concerning listing and classification should be restricted to the classification of new substances, and that reclassification of existing substances should be avoided as far as possible as long as the process of global harmonization has not been completed.

213. It was agreed that for the 1997 July session of the Sub-Committee the first week should be devoted to matters listed under (1) which would be discussed in the order of the Parts and Chapters of the Model Regulations. The second week would be reserved for matters listed under (2) and (3). It was also agreed that the 1997 July session of the Sub-Committee should end on the Thursday of the second week.

214. The following documents were carried forward:

ST/SG/AC.10/R.473, -/R.509, -/R.510, -/R.513 and -/Corr.1, -/R.515 and -/Corr.1, -/R.519, -/R.532;

ST/SG/AC.10/C.3/R.529, -/C.3/R.602 and -/Add.1, -/Add1/Corr.1 and -/Add.2, -/C.3/R.613/Rev.1, -/C.3/R.635, -/C.3/R.641, -/C.3/R.661, -/C.3/R.664, -/C.3/R.705, -/C.3/R.707, -/C.3/R.708, -/C.3/R.709, -/C.3/R.732, -/C.3/R.737, -/C.3/R.749, -/C.3/R.764, -/C.3/R.775.

Calendar of meetings for the biennium 1997-98

215. The dates for the Committee and its Sub-Committee in the biennium are

7-17 July 1997	Sub-Committee of Experts on the Transport of Dangerous Goods (thirteenth session)
8 - 19 December 1997	Sub-Committee of Experts on the Transport of Dangerous Goods (fourteenth session)
29 June - 10 July 1998	Sub-Committee of Experts on the Transport of Dangerous Goods (fifteenth session)
7 - 16 December 1998	Committee of Expert on the Transport of Dangerous Goods (twentieth session)

DRAFT RESOLUTION 1997/... OF THE ECONOMIC AND SOCIAL COUNCIL

216. The Committee prepared a draft resolution for consideration by the Economic and Social Council on its 1995 substantive session (see annex 7).

ANY OTHER BUSINESS**Interpretation into Spanish**

Documents: ST/SG/AC.10/R.524 (Argentina)
INF.4 (GRULAC)

217. These documents contained a request by Argentina, supported by a letter from the Permanent Mission of Haiti to the United Nations Office in Geneva on behalf of GRULAC (Grupo Latinoamericano y del Caribe), for simultaneous interpretation into Spanish during sessions of the Committee and the Sub-Committee.

218. As the Committee and the Sub-Committee are subsidiary bodies of the Economic and Social Council, they are entitled to simultaneous interpretation into Spanish and this was provided for as from this session of the Committee.

New proposals

219. Documents listed under this item of the agenda were discussed under agenda item 3(a) (See paragraph 47).

TRIBUTES AND THANKS

220. The expert from Canada, M. Monteith, on behalf of the Committee, paid tribute to the outstanding performance of Mr. L. Grainger as chairman of the Committee over the past eight years and said that he would be greatly missed. He wished him, on behalf of the Committee, all success in his future activities.

221. Mr. Grainger thanked Mr. Monteith for his kind words and his support as vice-chairman during these long years in particular for his dedication for chairing any kind of lunch time, evening or early morning working groups organized on the spot, and for replacing him when he unfortunately fell sick. He also wished him, on behalf of the Committee his best wishes for the future.

222. The Committee endorsed unanimously and enthusiastically the expression of thanks and good wishes to both officers of the outgoing bureau.

ADOPTION OF THE REPORT

223. The Committee adopted the report on its nineteenth session and the annexes thereto.

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Annex 1: Amendments to the ninth revised edition of the Recommendations on the Transport of Dangerous Goods (ST/SG/AC.10/1/Rev.9)(except Chapter 12, Part I and Chapter 17)
(see ST/SG/AC.10/23/Add.1)

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Annex 2: Amendments to the second revised edition of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.2) (see ST/SG/AC.10/23/Add.1)

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Annex 3: Amendments to the Recommendations on the Transport of Dangerous Goods, Chapters 12 (Part I) and 17 and to ST/SG/AC.10/R.505/Add.8
(see ST/SG/AC.10/23/Add.2)

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Annex 4: Amendments related to the reformatting of the Recommendations on the Transport of Dangerous Goods into Model Regulations
(see ST/SG/AC.10/23/Add.2)

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Annex 5: Consolidated text of provisions related to multimodal portable tank transport (Chapters 4.2 and 7.6 of the Model Regulations)
(see ST/SG/AC.10/23/Add.3)

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Annex 6: Report on the work of the Joint ILO/UN working groups on harmonized classification criteria for flammability and reactivity (ECOSOC Resolution 1995/6)
(see ST/SG/AC.10/23/Add.4)

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Annex 7

DRAFT RESOLUTION OF THE ECONOMIC AND SOCIAL COUNCIL

**1996/... Work of the Committee of Experts on the
Transport of Dangerous Goods**

The Economic and Social Council,

Recalling its resolutions 1995/5 and 1995/6 of 19 July 1995,

Recalling also its decision 1996/301 of 26 July 1996 by which it invited the Committee, when examining the question of periodicity of amendments to the Recommendations on the Transport of Dangerous Goods, to take fully into account the views expressed by delegations during the substantive session of 1996 of the Council on the note by the Secretary-General of the International Maritime Organization¹,

Bearing in mind the increasing volume of dangerous goods in world-wide commerce and the rapid expansion of technology and innovation,

Bearing also in mind the continuing need to meet the growing concern for the protection of life, property and the environment through the safe transport of dangerous goods while facilitating trade,

Aware that, in order to achieve internationally harmonized laws, the Economic Commission for Europe, the International Maritime Organization, the International Civil Aviation Organization and other specialized agencies and international organizations involved in activities related to the transport of dangerous goods and interested Member States have responded positively to the Council's various resolutions adopted since 15 April 1953, and that, being committed to taking the recommendations of the Committee of Experts on the Transport of Dangerous Goods as a basis for the formulation of their requirements and regulations, including those concerning labelling and classification, those organizations therefore rely on the work of the Committee,

Aware also of the advice of the Committee to the effect that reformatting the provisions applicable to all modes of transport contained in the Recommendations on the Transport of Dangerous Goods² into model regulations annexed to a basic recommendation, that could be directly integrated into all modal national and international regulations would enhance harmonization, facilitate regular updating of all instruments concerned by the relevant organizations or regulatory authorities, and result in overall considerable resource savings for the Governments of the Member States, the United Nations, the specialized agencies and other international organizations,

¹ E/1996/15, E/1996/63, E/1996/66, E/1996/84, E/1996/NGO/1.

² ST/SG/AC.10/1/Rev.9 (United Nations publication, Sales No. E.95.VIII.1).

Reconfirming the need for the Committee to participate actively in relevant activities associated in the implementation of Agenda 21³, as expressed in resolution 1995/6,

A. Work of the Committee of Experts during the biennium 1995-1996

1. Takes note of the report of the Secretary-General on the work of the Committee of Experts on the Transport of Dangerous Goods during the biennium 1995-1996⁴ in particular of:

(a) The adoption of new and amended provisions⁵ for inclusion in the Recommendations on the Transport of Dangerous Goods²;

(b) The completion of the first step of the reformatting of the existing Recommendations into Model Regulations annexed to a basic recommendation⁶;

(c) The elaboration, pursuant to resolution 1995/6, of proposals for criteria for the classification of flammable, explosive and reactive materials, globally harmonized for various regulatory purposes, in cooperation with ILO in the context of the implementation of Agenda 21, Chapter 19, Programme Area B⁷; and the concurrence of the Committee with the request from ILO for pursuing the work in 1997-1998 for unresolved issues on the same basis as in 1995-1996;

2. Commends the Secretary-General for the timely publication of the ninth revised edition of the Recommendations on the Transport of Dangerous Goods² in all the official languages of the United Nations and for the publication of the second revised edition of the Manual of Tests and Criteria in English, French, Spanish and Russian⁷;

3. Requests the Secretary-General:

(a) To circulate the new and amended recommendations to the Governments of Member States, the specialized agencies, the International Atomic Energy Agency and other international organizations concerned;

³ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992 (A/CONF.151/26/Rev.1 (Vol.I and Vol I/Corr.1, Vol.II, Vol.III and Vol.III/Corr.1)) (United Nations publication, Sales No. E.93.I.8 and corrigenda), Vol.I : Resolutions Adopted by the Conference, resolution 1, annex II).

⁴ E/1997/...

⁵ ST/SG/AC.10/23/Add.1.

⁶ ST/SG/AC.10/23/Add.2.

⁷ ST/SG/AC.10/11/Rev.2 (United Nations publication, Sales No. E.95.VIII.2).

(b) To publish the consolidated version ⁸ of the Recommendations on the Transport of Dangerous Goods, as amended, in the reformatted form of Model Regulations annexed to a basic Recommendation, including the new and amended recommended provisions, in all the official languages of the United Nations, in the most cost-effective manner, not later than the end of 1997;

(c) To expedite the publication, in the most cost-effective manner, of the second revised edition of the Manual of Tests and Criteria in Arabic and Chinese ⁹;

4. Invites all Governments, the specialized agencies, the International Atomic Energy Agency and the other international organizations concerned to transmit to the Secretary-General their views on the Committee's work, together with any comments that they may wish to make on the amended recommendations;

5. Invites all interested Governments, regional commissions and specialized agencies and the international organizations concerned, when developing or updating appropriate codes and regulations, to take full account of the recommendations of the Committee including as regards the structure and format of such codes and regulations;

B. Programme of work for the biennium 1997-1998

6. Approves the programme of work ¹⁰ of the Committee and its Sub-Committee of Experts on the Transport of Dangerous Goods and its Sub-Committee for the biennium 1997-1998, and the working arrangements and the priorities of work for that biennium, as follows:

(a) Global harmonization of systems of classification and labelling of chemicals (implementation of Chapter 19 of Agenda 21), in accordance with Council resolution 1995/6 of 19 July 1995 on the role of the Committee in the development of a harmonized system of classification and labelling of chemicals for implementing chapter 19 of Agenda 21¹;

(b) Reformatting of the Recommendations on the Transport of Dangerous Goods into Model Regulations (second step);

(c) New or revised recommendations on the transport of dangerous goods;

7. Requests the Secretary-General to take all necessary steps for ensuring secretariat representation of the Committee at appropriate meetings of international organizations committed to implementing the recommendations of the Committee or involved in the process of global harmonization of classification and labelling systems for chemicals;

⁸ ST/SG/AC.10/1/Rev.10.

⁹ ST/SG/AC.10/11/Rev.2.

¹⁰ ST/SG/AC.10/23, paras 200-206 and 211-214.

C. Periodicity of amendments to the Recommendations**8. Takes note of the advice of the Committee that**

(a) A new revised version of the Recommendations on the Transport of Dangerous Goods should be published after completion of the second step of reformatting, i.e. in 1999 after the 1998 session of the Committee;

(b) That revised version should be implemented by the various international organizations concerned with the transport of dangerous goods through their respective modal instruments by 1 January 2001; and

(c) No firm decision as regards a possible future four-year periodicity of amendments should be taken as long as the processes of reformatting the Recommendations on the Transport of Dangerous Goods into Model Regulations annexed to a basic recommendation and of global harmonization of systems of classification and labelling of chemicals for implementation of Agenda 21 have not been completed;

9. Invites the Committee to reconsider the issue at its 1998 session;**D. Report to the Council**

10. Requests the Secretary-General to submit a report to the Council in 1999 on the implementation of the present resolution.



Secretariat

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**COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS**

**REPORT OF THE COMMITTEE OF EXPERTS
ON ITS NINETEENTH SESSION
(2-10 December 1996)**

Addendum 1

- Annex 1:** Amendments to the ninth revised edition of the United Nations Recommendations on the Transport of Dangerous Goods (except Chapter 12, Part I and Chapter 17)
- Annex 2:** Amendments to the second revised edition of the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.2)

Annex 1

**AMENDMENTS TO THE NINTH REVISED EDITION OF THE UNITED NATIONS
RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS
(except Chapter 12, Part I and Chapter 17)**

- NOTE 1:** *For amendments to Chapter 12, Part I and Chapter 17, see annex 3.*
- 2:** *These amendments are presented in accordance with the present structure of the Recommendations. As the Recommendations have been reformatted into Model Regulations annexed to a basic Recommendation, the amendments will be incorporated in the tenth revised edition of the Recommendations on the Transport of Dangerous Goods on the basis of the new structure (see annex 4).*

CHAPTER 1

SCOPE OF THE RECOMMENDATIONS

- 1.8** Insert a new section as follows:

"APPLICABILITY

- 1.8** The provisions of these Recommendations do not apply to the transport of:
- (a) dangerous goods in bulk which, in most countries, are subject to special regulations;
 - (b) dangerous goods that are required for the propulsion of the means of transport or the operation of its specialized equipment during transport (e.g. refrigeration units) or that are required in accordance with the operating regulations (e.g. fire extinguishers); and
 - (c) dangerous goods, packaged for retail sale, that are carried by individuals for their own use.

NOTE 1: *Specific modal provisions for the transport of dangerous goods as well as derogations from these general requirements can be found in the modal regulations.*

NOTE 2: *Certain special provisions of Chapter 3 also indicate substances and articles which are not subject to these Recommendations.*"

Renumber subsequent sections accordingly as well as all references to Chapter 1 paragraph numbers throughout the Recommendations.

1.43

- (new)** Insert the following new paragraph 1.43: (after existing paragraph 1.41 which has been renumbered 1.42):

- "1.43** A mixture or solution containing one or more substances identified by name in these Recommendations or classified under a N.O.S. entry and one or more substances not subject to these Recommendations is not subject to these Recommendations if the hazard characteristics of the mixture or solution are such that they do not meet the criteria (including human experience criteria) for any class."

CHAPTER 2

LIST OF DANGEROUS GOODS MOST COMMONLY CARRIED

1. Amend entries in the list as follows:

Insert "279" into column (b3) (Special Provisions) for the following entries:

1230, 1547, 1577, 1578, 1590, 1591, 1661, 1662, 1663, 1671, 1673, 1708, 2023, 2078, 2311, 2432, 2474, 2512, 2730.

UN 0059	}	Delete "COMMERCIAL" from the description.
UN 0439		
UN 0440		
UN 0441		

UN 1105 Amend the name to read "PENTANOLS".

UN 1191 Delete the word "flammable" from the name in column (a2).

UN 1327 Delete "wet, damp or contaminated with oil" from the name in column (a2).
Replace special provision "76" with special provision "281" in column (b3).
Delete packing group "III" in column (c1).

UN 1364 Delete special provision "34" in column (b3).

UN 1366 Add subsidiary risk "4.3" in column (b2).

UN 1370 Add subsidiary risk "4.3" in column (b2).

UN 1391 Add special provision "282" in column (b3).

UN 1435 Add special provision "223" in column (b3).

UN 1500 Add subsidiary risk "6.1" in column (b2).

UN 1921 Add subsidiary risk "6.1" in column (b2).

UN 1950 Delete special provision "197" in column (b3).

- UN 2003** Amend the name to read:
"METAL ALKYLs, WATER-REACTIVE, N.O.S. or METAL ARYLs,
WATER-REACTIVE, N.O.S."
Add subsidiary risk "4.3" in column (b2).
- UN 2344** Delete packing group "II" in column (c1); add special provision "184" in
column (b3).
- UN 2401** Reclassify from Class 3 to Class 8 (column (b1)).
Change subsidiary risk (column (b2)) from "8" to "3".
Change packing group (column (c1)) from "II" to "I".
- UN 2451** Transfer from Division 2.3 to Division 2.2.
- UN 2771** Amend the name in column (a2) to read:
"THIOCARBAMATE PESTICIDE, SOLID, TOXIC".
- UN 2772** Amend the name in column (a2) to read:
"THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash
point less than 23 °C".
- UN 2790** Add new special provision "275" in column (b3).
Delete "II" in the packing group column (c1).
- UN 2862** For "II" read "III" in the packing group column (c2).
- UN 2908** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - EMPTY
PACKAGING".
- UN 2909** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - ARTICLES
MANUFACTURED FROM NATURAL URANIUM or DEPLETED
URANIUM or NATURAL THORIUM".
- UN 2910** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - LIMITED
QUANTITY OF MATERIAL".
- UN 2911** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - INSTRUMENTS or
ARTICLES".
- UN 2912** Add "non fissile or fissile excepted" to the name in (a2).

- UN 2915** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE A PACKAGE, non-special form, non fissile or fissile-excepted".
- UN 2916** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, non fissile or fissile-excepted".
- UN 2917** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, non fissile or fissile-excepted".
- UN 2922**
UN 2986
UN 2987 } Insert "M" in the packing method column (c2).
UN 2988 }
- UN 3005** Amend the name in column (a2) to read:
"THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C".
- UN 3006** Amend the name in column (a2) to read:
"THIOCARBAMATE PESTICIDE, LIQUID, TOXIC".
- UN 3049** Amend the name in column (a2) to read:
"METAL ALKYL HALIDES, WATER-REACTIVE, N.O.S. or METAL ARYL HALIDES, WATER-REACTIVES, N.O.S.". Add subsidiary risk "4.3" in column (b2).
- UN 3050** Amend the name in column (a2) to read:
"METAL ALKYL HYDRIDES, WATER-REACTIVE, N.O.S. or METAL ARYL HYDRIDES, WATER-REACTIVE, N.O.S.". Add subsidiary risk "4.3" in column (b2).
- UN 3051**
UN 3052 } Add subsidiary risk "4.3" in column (b2).
UN 3053 }
- UN 3076** In column (c2), add "M".
Add subsidiary risk "4.3" in column (b2).
- UN 3147** Change special provision "184" to "185" in column (b3).
- UN 3153** Insert "M" in the packing method column (c2).

- UN 3164** Add special provision "283" in column (b3).
- UN 3166** Delete special provision "117" in column (b3).
- UN 3171** Delete "wet battery" from the name in column (a2).
- UN 3203** Amend the name to read:
"PYROPHORIC ORGANOMETALLIC COMPOUND, WATER-REACTIVE, N.O.S."
Add subsidiary risk "4.3" in column (b2). Add "M" in column (c2).
- UN 3207** Insert "M" in the packing method column (c2).
- UN 3257** At the end of the name and description in column (a2), add the words:
"(including molten metals, molten salts, etc.)".
- UN 3268** Amend the name in column (a2) to read:
"AIR BAG INFLATORS pyrotechnic or AIR BAG MODULES pyrotechnic or SEAT-BELT PRETENSIONERS pyrotechnic".
Add special provision "280" in column (b3).
- UN 3319** Amend the name to read:
"NITROGLYCERIN MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 2 % but not more than 10 % nitroglycerin, by mass".
Add Special Provisions 109 and 274 in column (b3).
- UN 3323** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE C PACKAGE, non fissile or fissile-excepted".
- UN 3327** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE A PACKAGE, FISSILE, non-special form".
- UN 3328** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE".
- UN 3329** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, FISSILE".
- UN 3330** Amend the name in column (a2) to read:
"RADIOACTIVE MATERIAL, TYPE C PACKAGE, FISSILE".

2. Delete the following entries:

2666, 2767, 2768, 3001, 3002, 2773, 2774, 3007, 3008, 2769, 2770, 3003, 3004, 2765, 2766, 2999, 3000.

3. Add new entries as follows:

	(a1)	(a2)	(b1)	(b2)	(b3)	(c1)	(c2)
3332	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, non fissile or fissile-excepted		7				
3333	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, FISSILE		7				
3334	AVIATION REGULATED LIQUID, N.O.S.		9		106 274 276		
3335	AVIATION REGULATED SOLID, N.O.S.		9		106 274 276		
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.		3		185 274		M
3337	REFRIGERANT GAS R 404A		2.2				M
3338	REFRIGERANT GAS R 407A		2.2				M
3339	REFRIGERANT GAS R 407B		2.2				M
3340	REFRIGERANT GAS R 407C		2.2				M
3341	THIOUREA DIOXIDE		4.2		184		
3342	XANTHATES		4.2		184		
3343	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, FLAMMABLE, N.O.S. with not more than 30% nitroglycerin, by mass		3		109 274 278		
3344	PENTAERYTHRITE TETRANITRATE MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 10% but not more than 20% PETN, by mass		4.1		109 272 274	II	
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC		6.1		61 109 274		

(a1)	(a2)	(b1)	(b2)	(b3)	(c1)	(c2)
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C	3	6.1	61 130 274	109	
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C	6.1	3	61 109 274		
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1		61 109 274		
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1		61 109 274		
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flash point less than 23 °C	3	6.1	61 109 130 274		
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flash point not less than 23 °C	6.1	3	61 109 274		
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1		61 109 274		
3353	AIR BAG INFLATORS, COMPRESSED GAS or AIR BAG MODULES, COMPRESSED GAS or SEAT-BELT PRETENSIONERS, COMPRESSED GAS	2.2		280		
3354	INSECTICIDE GAS, FLAMMABLE, N.O.S.	2.1		109 274		
3355	INSECTICIDE GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	109 274		
3356	OXYGEN GENERATOR, CHEMICAL	5.1		284	11	

CHAPTER 3

SPECIAL PROVISIONS RELATING TO INDIVIDUAL SUBSTANCES AND ARTICLES

- 43** Amend to read as follows:
- “When offered for carriage as pesticides, these substances shall be carried under the relevant pesticide entry and in accordance with the relevant pesticide provisions (see 6.6 and 6.7)”.
- 61** Amend to read as follows:
- “The technical name which shall supplement the proper shipping name shall be the ISO common name, other name listed in ‘The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification’ or the name of the active substance (see also 13.8.4.1)”.
- 68** Amend to read as follows:
- “This substance in concentrations of:
- more than 70% should be placed in Packing Group I and bear a subsidiary risk label of Division 5.1;
 - not more than 70 % should be placed in Packing Group II and not bear a subsidiary risk label.”
- 170** Amend “non-injurious” to read “non-toxic” and amend the end to read as follows:
- “...electric storage batteries (Class 8) and lithium batteries (Class 9).”
- 197** Delete.
- 230** Delete subparagraphs (f) and (h)-(l).
Existing (a) becomes (b).
Insert a new (a) as follows:
- “(a) each cell or battery type has been determined to meet the criteria for assignment to Class 9 on the basis of tests carried out in accordance with the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part III, sub-section 38.3;”
- Existing (b) becomes (c).
Existing (c) becomes (d) with the deletion of the words “in such a manner as”.
Existing (d) becomes (e).
Existing (e) becomes (f).
In subparagraph (g) delete the words “in such a manner as”.
- 239** Insert at the beginning: “Except for air transport...”.
After “vehicles” add “(UN 3171)”.

- 240** Add "or sodium batteries" after "powered by wet batteries".

Add new special provisions as follows:

- 275** Solutions with more than 10% and less than 50% acid, by mass, should be placed in Packing Group III.

Solutions with not less than 50% but not more than 80% acid, by mass, should be placed in Packing Group II.

- 276** This includes any substance which is not covered by any of the other classes but which has narcotic, noxious or other properties such that, in the event of spillage or leakage on an aircraft, annoyance or discomfort could be caused to crew members so as to prevent the correct performance of assigned duties.

- 278** These substances should not be classified and transported unless authorized by the competent authority on the basis of results from Series 2 test and a Series 6(c) test on packages as prepared for transport (see para. 4.4.5). The competent authority should assign the packing group on the basis of the Chapter 5 criteria and the package type used for the Series 6(c) test.

- 279** The substance is assigned to this classification or Packing Group based on human experience rather than the strict application of classification criteria set out in the Recommendations.

- 280** This entry applies to articles which are used as life saving vehicle air bag inflators or air bag modules or seat-belt pretensioners, containing a gas or a mixture of compressed gases classified under Division 2.2 and with or without small quantities of pyrotechnic material. For units with pyrotechnic material, initiated explosive effects shall be contained within the pressure vessel such that the unit may be excluded from Class 1 in accordance with 1.11 (b), in conjunction with 16.6.1.4.7 (a) (ii) of the Manual of Tests and Criteria, Part 1. In addition, units shall be designed or packaged for transport so that when engulfed in a fire there will be no fragmentation of the pressure vessel or projection hazard. This shall be determined by analysis.

The pressure vessel should be in compliance with the requirements for the gas(es) contained in the pressure vessel.

Air bags or seat-belts installed in vehicles or in completed vehicle components such as steering columns, door panels, seats etc. are not subject to these Recommendations.

- 281** The transport by sea of hay, straw or bhusa, wet, damp or contaminated with oil should be prohibited. Transport by other modes should also be prohibited except with special authorization by the competent authorities.

Hay, straw and bhusa, when not wet, damp or contaminated with oil, are subject to these Recommendations only when transported by sea.

- 282** Suspensions with a flash point of not more than 60.5 °C should bear a flammable liquid subsidiary risk label.

- 283** Articles intended to function as shock absorbers are not subject to these Recommendations provided each article:
- (a) has a gas space capacity not exceeding 1 litre and a charge pressure not exceeding 50 bar;
 - (b) has a minimum burst pressure of 4 times the charge pressure at 20 °C;
 - (c) is manufactured from material which will not fragment upon rupture;
 - (d) when subjected to fire, is protected from rupture by means of a fire degradable seal or a pressure relief device to relieve internal pressure; and
 - (e) is manufactured in accordance with a quality assurance standard acceptable to the competent authority.
- 284** An oxygen generator, chemical, containing oxidizing substances should meet the following conditions:
- (a) the generator when containing an explosive actuating device should only be transported under this entry when excluded from Class 1 in accordance with paragraph 1.1.1(b) of these Recommendations;
 - (b) in addition to the requirements of Packing Group II applicable to the package, the generator, without its packaging, should be capable of withstanding a 1.8 m drop test onto a rigid, non-resilient, flat and horizontal surface, in the position most likely to cause damage, without loss of its contents and without actuation;
 - (c) when a generator is equipped with an actuating device, it should have at least two positive means of preventing unintentional actuation;
 - (d) the generator(s) should be transported in a package which will meet the following requirements when one generator in the package is actuated:
 - (i) other generators in the package will not be actuated;
 - (ii) packaging material will not ignite; and
 - (iii) the outside surface temperature of the completed package will not exceed 100 °C".

CHAPTER 4

SPECIAL RECOMMENDATIONS RELATING TO CLASS 1

4.8.2.14 Change the last sentence to read:

"Such unpackaged articles may be fixed to cradles or contained in crates or other suitable handling, storage or launching devices in such a way that they will not become loose during normal conditions of transport."

Add a new sub-paragraph as follows:

"Where such large explosive articles are as part of their operational safety and suitability tests subjected to test regimes that meet the intentions of these Recommendations and such tests have been successfully undertaken, the competent authority may approve such articles to be transported under these Recommendations."

4.9 In the definition for the entry "CHARGES, SHAPED, COMMERCIAL without detonator" delete the word ",COMMERCIAL".

Table 4.4

Delete the word ", commercial" in the following entry:

"Charges, shaped, commercial without detonator: 0059, 0439, 0440, 0441".

CHAPTER 5

SPECIAL RECOMMENDATIONS RELATING TO CLASS 3

Amend 5.6 (b) to read:

"5.6 (b) The mixture does not contain any substances with a primary or a subsidiary risk of Division 6.1 or Class 8".

5.6 Delete the Note.

CHAPTER 6

SPECIAL RECOMMENDATIONS RELATING TO CLASS 6

6.3.2 Delete the current footnote (a) to the table in paragraph 6.3.2 and renumber the remaining footnote (b) as footnote (a).

6.7.2 Add the following note to the end of paragraph 6.7.2:

“NOTE: LD50 toxicity data for a number of common pesticides may be obtained from the most current edition of the document “The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification” available from the International Programme on Chemical Safety, World Health Organization (WHO), 1211 Geneva 27, Switzerland. While that document may be used as a source of LD50 data for pesticides, its classification system should not be used for purposes of transport classification of, or assignment of packing groups to, pesticides, which should be in accordance with these Recommendations.”

6.7.3 Replace the existing text in paragraph 6.7.3 with the following:

“The proper shipping name used in the transport of the pesticide should be selected on the basis of the active ingredient, of the physical state of the pesticide and any subsidiary risks it may exhibit.”

Table 6.1 Delete.

6.9.4 Amend to read as follows:

“6.9.4 *Biological products* are those ... (unchanged) ... and diagnostic products.

For the purposes of these Recommendations, biological products are divided into the following groups:

- (a) those which contain pathogens in risk group 1; those which contain pathogens under such conditions that their ability to produce disease is very low to none; and those known not to contain pathogens.

Substances in this group are not considered infectious substances for the purposes of these Recommendations;

- (b) those manufactured and packaged in accordance with the requirements of national governmental health authorities and transported for the purposes of final packaging or distribution, and use for personal health care by medical professionals or individuals.

Substances in this group are not subject to the Recommendations applicable to Division 6.2;

- (c) those known or reasonably expected to contain pathogens in risk groups 2, 3, or 4 and which do not meet the criteria of 6.9.4(b) above.

Substances in this group should be classified in Division 6.2 under UN 2814 or UN 2900, as appropriate.

NOTE: *Some licensed biological products may ... (unchanged) ... other restrictions.”*

6.9.5 Amend to read:

"6.9.5 *Diagnostic specimens* are any human or animal material including, but not limited to, excreta, secret, blood and its components, tissue and tissue fluids being transported for diagnostic or investigation purposes, but excluding live infected animals.

For the purposes of these Recommendations diagnostic specimens are divided into the following groups:

- (a) those known or reasonably expected to contain pathogens in risk groups 2, 3 or 4 and those where a relatively low probability exists that pathogens of risk group 4 are present. Such substances should be classified in Division 6.2 under UN 2814 or UN 2900, as appropriate. Specimens transported for the purpose of initial or confirmatory testing for the presence of pathogens fall within this group;
- (b) those where a relatively low probability exists that pathogens of risk groups 2 or 3 are present. Specimens transported for the purpose of routine screening tests or initial diagnosis for other than the presence of pathogens fall within this group;
- (c) those known not to contain pathogens."

6.9.6 To be deleted; renumber consequently.

6.10 Amend to read:

"6.10 Biological products and diagnostic specimens

6.10.1 Biological products known to contain, or thought likely to contain, any infectious substances should meet the requirements for infectious substances. Biological products referred to in 6.9.4 (a) and (b) are not subject to the Recommendations applicable to Division 6.2.

6.10.2 Diagnostic specimens ..."

6.13.2 At the end of the sentence add the following new sentence:

"Complete packages may be overpacked in accordance with the provisions of 13.9: such an overpack may contain dry ice."

6.13.3 Amend 6.13.3 (b) (ii) as follows:

"(ii) For substances consigned refrigerated or frozen, ice, dry ice or other refrigerant should be placed around the secondary packaging(s) or alternatively in an overpack with one or more complete packages marked in accordance with 6.13.6. Interior supports should be provided to secure secondary packaging(s) or packages in position after the ice or dry ice has dissipated. If ice is used, the outer packaging or overpack should be leakproof. If dry ice is used, the outer packaging or overpack should permit the release of

carbon dioxide gas. The primary receptacle and the secondary packaging should maintain their integrity at the temperature of the refrigerant used."

6.14.9

Renumber as a new paragraph 6.10.3.

At the end of the first sentence amend "of this section" to read "6.14".

CHAPTER 7**SPECIAL RECOMMENDATIONS RELATING TO CLASS 7**

Amend the entries for IAEA Schedules in the table as follows:

IAEA SCHEDULES <u>2/</u>	UN NUMBER
9	2915, 3332
9 + 13 <u>3/</u>	3327, 3333

CHAPTER 9**GENERAL RECOMMENDATIONS ON PACKING****9.2.1**

In the definition of "reconditioned packagings" insert "(a)" before "metal drums" and add a new subparagraph (b) as follows:

"(b) plastics drums and jerricans that:

- (i) are cleaned to original materials of construction, with all former contents, external coatings and labels removed;
- (ii) have all non-integral gaskets replaced; and
- (iii) are inspected after cleaning with rejection of packagings with visible damage such as tears, crease or cracks, or damaged threads or closures or other significant defects."

Insert at the appropriate place a definition for "Recycled plastics material" as follows:

"*Recycled plastics material* means material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings. The specific properties of the recycled material used for production of new packagings should be assured and documented regularly as part of a quality assurance programme recognized by the competent authority. The quality assurance programme should include a record of proper pre-sorting and verification that each batch or recycled plastics material has the

proper melt flow rate, density, and tensile yield strength, consistent with that of the design type manufactured from such recycled material. This necessarily includes knowledge about the packaging material from which the recycled plastics have been derived, as well as awareness of the prior contents of those packagings if those prior contents might reduce the capability of new packagings produced using that material. In addition, the packaging manufacturer's quality assurance programme under 9.3.14 should include performance of the mechanical design type test in 9.7 on packagings manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing."

Revise the definition of "remanufactured packagings" in 9.2.1 by inserting an "(a)" before "metal drums" and adding a new "(b)" as follows:

"(b) plastics drums that:

- (i) are converted from one UN type to another UN type (eg 1H1 to 1H2); or
- (ii) undergo the replacement of integral structural components."

9.6.7.1 Amend the beginning of the second sentence to read:

"Except for recycled plastics material as defined in 9.2.1, no...(rest unchanged)"

9.6.7.2 Add a new sentence as follows:

"Packagings manufactured with such recycled plastics material should be marked "REC" near the marks prescribed in 9.5.1."

9.7.6.3 Delete the sentence before last one.

CHAPTER 11

SPECIAL RECOMMENDATIONS RELATING TO CLASS 5

11.3.5.4 Amend as follows:

The following organic peroxides should be subjected to temperature control during carriage:

organic peroxides type B and C with an SADT $\leq 50^{\circ}\text{C}$;

organic peroxides type D showing a medium effect when heated under confinement ^{*}/ with a SADT $\geq 50^{\circ}\text{C}$ or showing a low or no effect when heated under confinement with a SADT $\geq 45^{\circ}\text{C}$; and

organic peroxides types E and F with a SADT $\geq 45^{\circ}\text{C}$.

11.3.6.2 Add as follows:

"11.3.6.2 Test methods for determining the flammability are given in Part III, 32.4 of the Manual of Tests and Criteria. Because organic peroxides may react vigorously when heated it is recommended to determine their flash point using small sample sizes such as described in ISO 3679:1983."

11.3.10.6 (c) Replace by the following text:

"Single mechanical refrigeration; provided that for organic peroxides with a flashpoint lower than the sum of the emergency temperature plus 5°C explosion-proof electrical fittings are used within the cooling compartment to prevent ignition of flammable vapours from the organic peroxides."

11.3.10.6 (e) Replace the last indent, by the following text:

"for organic peroxides with a flash point lower than the sum of the emergency temperature plus 5°C explosion-proof electrical fittings are used within the cooling compartment to prevent ignition of flammable vapours from the organic peroxides."

11.3.12.3 Amend to read as follows:

"To prevent explosive rupture of metal IBCs or composite IBCs with complete metal casing the emergency-relief devices should be designed to vent all the decomposition products and vapours evolved during self-accelerating decomposition or during a period of not less than one hour of complete fire-engulfment calculated by the equations as given in 12.558."

^{*}/ As determined by test series E as prescribed in the current edition of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Part II.

Table 11.3 Insert the following organic peroxide into table 11.3:

Organic peroxide:	ISOPROPYL sec-BUTYL PEROXYDICARBONATE + DI-sec-BUTYL PEROXYDICARBONATE + DI-ISOPROPYL PEROXYDICARBONATE
Concentration (%)	≥ 32 + ≥ 15-18 + ≤ 12-15
Diluent type A (%)	≥ 38
Packing Method	OP7
Control Temperature (°C)	-20 °C
Emergency Temperature (°C)	-10 °C
Number (Generic entry)	3115

Table 11.4

1. Add an introductory note following the heading of Table 11.4 to read:

“NOTE: When consigning an organic peroxide in an IBC in accordance with the following provisions, it is the responsibility of the consignor to ensure that:

(a) The pressure and emergency relief devices installed on the IBC are designed to take appropriate account of the self-accelerating decomposition of the organic peroxide and of fire engulfment; and

(b) When applicable, the control and emergency temperatures indicated are appropriate, taking into account the design (e.g. insulation) of the IBC to be used.”

2. Add a footnote to the column headings reading “Control Temperature” and “Emergency Temperature” with the footnote to read:

“ 2/ The temperatures indicated are based on a non-insulated IBC.”

3. Amend the entry for “Peroxyacetic acid, stabilized, not more than 17%” as follows:

(a) in the third column (“Type of IBC”), add: “31HA1” and “31A”; and

(b) in the fourth column (“Maximum quantity (litres)”), delete the figure “1000” and insert the figure “1500” for IBC types 31H1, 31HA1 and 31A.

CHAPTER 12

RECOMMENDATIONS ON MULTIMODAL TANK TRANSPORT

For changes to Part I, see annex 3.

Part II**Tables 12.1 and 12.2**

1. Amend as necessary to reflect the changes adopted for Chapter 2.
2. Add the following entries to Table 12.1

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3153	Perfluoro (methyl vinyl ether)	2.1		14.3 13.4 11.2 10.2	A		N.	1.14
3337	Refrigerant gas R 404A	2.2		31.6 28.2 25.2 22.1	Allowed	Normal	0.82	
3338	Refrigerant gas R 407A	2.2		32.3 29.0 25.7 22.4	Allowed	Normal	0.94	
3339	Refrigerant gas R 407B		2.2	30.5 27.0 23.6	34.0 Allowed		Normal	0.93
3340	Refrigerant gas R 407C	2.2		30.2 27.0 24.1 21.4	Allowed	Normal	0.95	

3. Amend entries in Table 12.2 as follows:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1921	Propyleneimine, inhibited	3/I		6	6mm	N.A.	12.9.3	12.22.3
2401	Piperidine	8/I	3	4	6mm	A/12.7.3	12.9.3	12.22.3
2790	Acetic acid solution more than 10% but not more than 80% acid by mass	8/II		2.65	12.5.2	A/12.7.3	N.	12.22.3
		8/III		2.65	12.5.2	A/12.7.2	N.	12.22.2
2922	Corrosive liquid, toxic, n.o.s.	8/I	6.1	4	8mm	N.A.	12.9.3	12.22.3
		8/II	6.1	4	6mm	N.A.	12.9.3	12.22.3
		8/III	6.1	2.65	12.5.2	12.7.3	N.	12.22.2
2986	Chlorosilanes, corrosive, flammable, n.o.s.	8/II	3	4	6mm	12.7.3	12.9.3	12.22.3
2987	Chlorosilanes, corrosive, n.o.s.	8/II		4	12.5.2	12.7.3	N.	12.22.3
2988	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s. ⁹	4.3/I	3 8	4	6mm	N.A.	12.9.3	12.22.3

4. Add the following new Note 15 to Table 12.2:

"15 *The portable tank may be fitted with a device located under maximum filling conditions in the vapour space of the shell to prevent the build up of excess pressure due to the slow decomposition of the substance transported. This device should also prevent an unacceptable amount of leakage of liquid in the case of overturning or entry of foreign matter into the tank. This device should be approved by the competent authority or its authorized body.*"

Add superscript "15" after the name in column (2) for the following entries: 1791, 1908, 2014, 2015, 2984 and 3149.

Add new entries to Table 12.2 as follows:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3076	Aluminium alkyl hydrides ^{2,10}	4.2/I	4.3	10	10mm	N.A.	N.	12.22.3
3203	Pyrophoric organometallic compound water-reactive, n.o.s. ^{2,10}	4.2/I	4.3	10	10 mm	N.A.	N.	12.22.3
3207	Organometallic compound ^{2,10} or compound solution ^{2,10} or compound dispersion ^{2,10} , water-reactive, flammable, n.o.s.	4.3/185	3	10	10mm	N.A	N.	12.22.3
3336	Mercaptans, liquid, flammable, n.o.s. or Mercaptan mixture, liquid, flammable, n.o.s.	3/I		6	6mm	N.A.	N.	12.22.3
		3/II		2.65	12.5.2	12.7.3	N.	12.22.2
		3/III		1.5	12.5.2	12.7.3	N.	12.22.2
3347	Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable ⁴		6.1	3	4.00	12.5.2	A/12.7.3	12.22.3
3348	Phenoxyacetic acid derivative pesticide, liquid, toxic ⁴	6.1		4.00	12.5.2	A/12.7.3	N.	12.22.3
3351	Pyrethroid pesticide, liquid, toxic, flammable ⁴		6.1	3	4.00	12.5.2	A/12.7.3	12.22.3
3352	Pyrethroid pesticide, liquid, toxic ⁴	6.1		4.00	12.5.2	A/12.7.3	N.	12.22.3

CHAPTER 13

RECOMMENDATIONS ON CONSIGNMENT PROCEDURES

13.2 Amend 13.2 to read: "Marking".

13.2.1 Amend 13.2.1, first sentence at the end to read:

"... on each package. In the case of unpackaged articles the marking should be displayed on the article, on its cradle or on its handling, storage or launching device."

13.3.1 Amend first sentence to read:

"The labels recommended in 13.4 should be affixed on goods or packages."

13.6.8 Replace the word "international" with "multimodal".

"Amend footnote 1/ to read:

" 1/ *If used, the relevant recommendations of the UN/ECE Working Party on Facilitation of International Trade Procedures may be consulted, in particular Recommendation No. 1 (United Nations Lay-out Key for Trade Documents) (ECE/TRADE/137, edition 82.2), Recommendation No. 11 (Documentary Aspects of the International Transport of Dangerous Goods) (ECE/TRADE/204, edition 96.1) and Recommendation No. 22 (Layout Key for Standard Consignment Instructions) (ECE/TRADE/168). Refer to the Trade Data Elements Directory, Volume III, Trade Facilitation Recommendations (ECE/TRADE 200) (United Nations publication Sales No. E. 96.II.E.13)*

13.8.4.1 For "other name(s) in Table 6.1", read "other name(s) in the WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification".

Figure 13.4 Replace Figure 13.4 with the figure reproduced overleaf, with the title "Example of a form which may be used as a combined dangerous goods declaration and container packing certificate for multimodal transport of dangerous goods".

MULTIMODAL DANGEROUS GOODS FORM

1. Shipper / Consignor / Sender		2. Transport document number	
		3. Page 1 of Pages	4. Shipper's reference
5. Consignee		5. Freight Forwarder's reference	
		7. Carrier (to be completed by the carrier)	
8. This shipment is within the limitations prescribed for: (Delete non applicable) PASSENGER AND CARGO AIRCRAFT CARGO AIRCRAFT ONLY		SHIPPER'S DECLARATION I hereby declare that the contents of this consignment are fully and accurately described below by the proper shipping name, and are classified, packaged, marked and labelled / placarded and are in all respects in proper condition for transport according to the applicable international and national governmental regulations.	
		9. Additional handling information	
10. Vessel / flight no. and date	11. Port / place of loading	14. Shipping marks * Number and kind of packages, description of goods Gross mass (kg) Net mass Cube (m ³)	
12. Port / place of discharge	13. Destination		
15. Container identification No. / vehicle registration No.			
16. Seal number (s)		17. Container/vehicle size & type	
18. Tare (kg)		19. Total gross mass (including tare) (kg)	
CONTAINER/VEHICLE PACKING CERTIFICATE I hereby declare that the goods described above have been packed loaded into the container/vehicle identified above in accordance with the applicable provisions. MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING		21 RECEIVING ORGANISATION RECEIPT Received the above number of packages/containers/placards in apparent good order and condition unless stated hereon: RECEIVING ORGANISATION REMARKS Haider's name Vehicle reg. no. Signature and date DRIVER'S SIGNATURE	
20. Name of company Name / Status of declarant Place and date Signature of declarant		22. Name of company (OF SHIPPER AND/FAVORER THIS NOTE) Name/Status of declarant Place and date Signature of declarant	

** For the purposes of these Recommendations, see paragraph 13.6.6.

MULTIMODAL DANGEROUS GOODS FORM**Continuation Sheet**

1. Shipper / Consignor / Sender		2. Transport document number		
		3.	4. Shipper's reference	
		Page 2 of Pages	5. Freight Forwarder's reference	
14. Shipping marks	* Number and kind of packages, description of goods	Gross mass (kg)	Net mass	Cube (m ³)

* FOR DANGEROUS GOODS you must identify proper shipping name, hazard class, (if any), packing group (where applicable) and any other element of information required under applicable national and international regulations.

CHAPTER 14

SPECIAL RECOMMENDATIONS RELATING TO CLASS 4

14.2.2.9.2 Amend to read as follows:

"To prevent explosive rupture of metal IBCs or composite IBCs with complete metal casing, the emergency-relief devices should be designed to vent all the decomposition products and vapours evolved during self-accelerating decomposition or during a period of not less than one hour of fire engulfment calculated by the equations given in 12.558."

CHAPTER 15

SPECIAL RECOMMENDATIONS FOR DANGEROUS GOODS IN LIMITED QUANTITIES

15.1 Amend the end of the first sentence to read:

"...certain classes packed in limited quantities."

15.3.2 Amend and add at the end of the first sentence:

", except that inner packagings that are liable to break or be easily punctured such as those made of glass, porcelain, stoneware or certain plastics, materials, etc, should not be transported in such packagings."

15.7 Amend to read as follows:

"Limited quantities of dangerous goods for personal or household use, that are packaged and distributed in a form intended or suitable for sale through retail agencies, may furthermore be exempted from marking of the proper shipping name and UN number on the packaging and from the requirements for a dangerous goods transport document."

Table 15.1

For flammable liquids, Packing Group II, amend in the last column to read: "1 litre".

CHAPTER 16

RECOMMENDATIONS ON INTERMEDIATE BULK CONTAINERS (IBCs)

The text is replaced by the text in ST/SG/AC.10/C.3/R.710 with the following modifications:

16.1.6.9 Add a new paragraph:

"The periodic testing and inspection requirements for IBCs are provided in sections 16.2, 16.4 and 16.5. An IBC should not be filled and offered for transport after the date

of expiry of the last periodic test required by 16.2.6, 16.4.6 or 16.5.6, or the date of expiry of the last periodic inspection required by 16.2.7, 16.4.7 or 16.5.7.

However, an IBC filled prior to the date of expiry of the last periodic test or inspection may be transported for a period not to exceed three months beyond the date of expiry of the last periodic test or inspection.

In addition, an IBC may be transported after the date of expiry of the last periodic test or inspection:

- (a) After emptying but before cleaning, for purposes of performing the required test or inspection prior to refilling; and
- (b) Unless otherwise approved by the competent authority, for a period not to exceed six months beyond the date of expiry of the last periodic test or inspection in order to allow the return of dangerous goods for proper disposal or recycling. Reference to this exemption should be entered in the transport document."

16.2.3.2 To be deleted.

APPENDIX A

LIST OF GENERIC OR N.O.S. PROPER SHIPPING NAMES

Amend as necessary in accordance with the amendments adopted for Chapter 2.

INDEX

Amend as necessary in accordance with the amendments adopted for Chapter 2.

In addition, add the following entries:

"Difluoromethane, pentafluoroethane, and 1,1,1,2-tetrafluoroethane azeotropic mixture with approximately 23% difluoromethane and 25% pentafluoroethane, see	2.2	3337
Difluoromethane, pentafluoroethane, and 1,1,1,2-tetrafluoroethane azeotropic mixture with approximately 20% difluoromethane and 40% pentafluoroethane, see	2.2	3338
Difluoromethane, pentafluoroethane, and 1,1,1,2-tetrafluoroethane azeotropic mixture with approximately 10% difluoromethane and 70% pentafluoroethane, see	2.2	3339

Pentafluoroethane, 1,1,1-trifluoroethane, and 1,1,1,2-tetrafluoroethane
azeotropic mixture with approximately 44% pentafluoroethane
and 52% 1,1,1-trifluoroethane, see

2.2 3340"

Amend the name "3-Methyl-2-penten-4-yne-1 ol, see

8 2705"

to "3-Methyl-2-penten-4-ynol, see

8 2705"

Add a cross reference to the entry for thiourea dioxide as follows:

"Formamidine sulphinic acid, see

4.2 3341"

Delete the entry "Ammonium tetrachloromercurate (II)".

Annex 2

**AMENDMENTS TO THE SECOND REVISED EDITION OF THE MANUAL OF TESTS
AND CRITERIA (ST/SG/AC.10/11/Rev.2)**

Figure 10.2 Replace respectively "New substance" in box 1 and "New Article" in box 14 with "Substance for Classification" and "Article for Classification"

Add the following footnote in Box No.3:

"For classification purposes, start with test series 2."

32.3.7 (b) Amend to read:

"The mixture does not contain any substances with a primary or a subsidiary risk of Division 6.1 or Class 8."

32.3.7 Delete the Note.

Appendix 5:

Example of a test method for vent sizing

1. Introduction

In the third sentence delete "(heat load 110 kW/m²)".

3. Calculation of heating rate to be used in the test

Amend to read as follows:

"If a portable tank is non-insulated, a heat load of the shell as given in 12.558*² is required. For an insulated tank, the Recommendations require that the heat load to the shell be equivalent to the heat transfer through the insulation plus the heat load to the shell on the assumption that 1% of the insulation is missing.

*² 4.2.1.13.8 of the Model Regulations.

The following information on the portable tank and organic peroxide is needed for the heating rate calculation:

F_i	= fraction of tank directly heated (1 if non-insulated, 0.01 if insulated)	[-]
M_i	= total mass of organic peroxide and diluent	[kg]
K	= heat conductivity of the insulation layer	[W.m ⁻¹ .K ⁻¹]
L	= thickness of insulation layer	[m]
U	= K/L = heat transfer coefficient	[W.m ⁻² .K ⁻¹]
A	= wetted area of portable tank	[m ²]
C_p	= specific heat of the organic peroxide formulation	[J/(kg ⁻¹ .K ⁻¹)]
T_{PO}	= temperature of peroxide formulation at relieving conditions	[K]

Heat input, q_i (W), via indirectly exposed surface (insulated part) is calculated by equations (1) and (2):

$$q_i = 70961 \ F (1 - F_i) A^{0.82} \quad (1)$$

where:

F = insulation factor;

$F = 1$ for non-insulated vessels, or

$$F = 2 \frac{U (923 - T_{PO})}{47032} \quad \text{for insulated vessels.} \quad (2)$$

In the calculation of F a multiplication factor of 2 is introduced to take into account a 50% loss in insulation efficiency in an incident.

Heat input, q_d (W), via the directly exposed surface (non-insulated part) is calculated by equation (3):

$$q_d = 70961 \ F \ F_i A^{0.82} \quad (3)$$

where:

F = insulation factor = 1 (non-insulated)

The overall heating rate, dT/dt (K/min), due to fire engulfment is calculated by equation (4):

$$dT/dt = \frac{(q_i + q_d)}{M_i C_p} 60 \quad (4)$$

Example:

For a typical 20 m³ insulated portable tank:

F_i	= fraction of tank directly heated	=	0.01
M_t	= total mass of organic peroxide and diluent	=	16268 kg
K	= heat conductivity of the insulation layer	=	0.031 W, m ⁻¹ , K ⁻¹
L	= thickness of the insulation layer	=	0.075 m
U	= heat transfer coefficient	=	0.4 W, m ⁻² , K ⁻¹
A	= wetted area of portable tank	=	40 m ²
C_p	= specific heat of the organic peroxide form.	=	2000 J, kg ⁻¹ , K ⁻¹
T_{PO}	= temperature of peroxide at relieving conditions	=	100 °C

and

$$q_i = 70961 \times 2 \frac{0.4 \times 923 - 373}{47032} \times (1 - 0.01) \times 40^{0.82} = 13533 \text{ W}$$

$$q_d = 70961 \times 1 \times 0.01 \times 40^{0.82} = 14611 \text{ W}$$

$$dT/dt = \frac{13533 + 14611}{16268 \times 2000} \times 60 = 0.052 \text{ K/min}$$
